

ETOBICOKE 1987

AIR QUALITY SURVEY

IN THE VICINITY OF

CHRIST THE KING

CATHOLIC SCHOOL

Brown's Line and Lakeshore Boulevard

MAY 1987

ARB-127-87-ARSP

JULY 1987



Ministry  
of the  
Environment

E. PICHÉ, Director  
Air Resources Branch

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ISBN 0-7729-2780-4

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ARB - 127 - 87 - ARSP

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Central Region  
Ministry of the Environment

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JULY 1987

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## EXECUTIVE SUMMARY

At the request of the residents of south Etobicoke and the Central Region of the Ministry of the Environment, a continuous air quality survey was conducted by Mobile Air Monitoring Units #1 and #2 of the Air Resources Branch in the Lakeshore Boulevard and Brown's Line area of Etobicoke throughout the last three weeks of May, 1987. The main aims of this survey were to determine the air quality in the vicinity of Christ the King Catholic School and to determine the source(s) of gaseous contaminants if elevated concentrations were measured.

The instrumentation housed in these mobile air monitoring units was capable of screening the air for 141 different organic compounds and in addition, continual measurement of up to 10 common contaminants as well as a complete set of ground-based meteorological parameters. Thirty-seven monitoring periods comprised this three-week survey and 434 hours of common contaminant data and 112 one-hour or eight-hour gas chromatographic samples for organic speciation were acquired.

No Ministry of the Environment Air Quality Criteria, Guidelines or Provisional Guidelines were exceeded for any of the measured contaminants during this survey. The air quality at and in the vicinity of Christ the King Catholic School was found to be typical of an urban environment.

## RÉSUMÉ ADMINISTRATIF

Comme suite à la demande des habitants d'Etobicoke sud et de la région du Centre, la Direction des ressources atmosphériques a effectué une étude continue de la qualité de l'air à Etobicoke pendant les trois dernières semaines de mai 1987. Cette étude avait pour objet d'évaluer la qualité de l'air à proximité de l'école catholique Christ the King et de déterminer la ou les sources de polluants gazeux en cas de concentrations élevées.

Aucun critère ni aucune limite, permanente ou provisoire, du ministère de l'Environnement en ce qui concerne les concentrations des polluants étudiés n'ont été dépassés. La qualité de l'air à l'école Christ the King et à proximité de celle-ci a été jugée typique d'un milieu urbain.

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## 1.0 Introduction

In 1986, the Central Region of the Ministry of the Environment requested the Air Resources Branch to conduct an air quality survey in the vicinity of Christ the King Catholic School to address concerns about emissions that might affect the health of students attending this school. This air quality survey was conducted in August of 1986. Gaseous organic emissions, particularly styrene, toluene, xylenes, ethyl benzene, and methylene chloride (also known as dichloromethane), were suspected to originate from PPG Canada Limited, Lawson Graphics Limited and other industries close to this school and as such, were the main concerns of the survey. This survey found that the levels of all monitored pollutants were typical of an urban environment. However, no firm conclusions could be made because good monitoring conditions occurred on only two days. Consequently, another survey was scheduled for May 11 to 29, 1987. The results of this second survey are the subject of this report.

## 2.0 Purpose and Methodology

### 2.1 Purpose

The primary purposes of this survey were to determine the air quality in the vicinity of Christ the King Catholic School and to determine the source(s) of gaseous contaminants if elevated concentrations were measured.

### 2.2 Sources

The local sources consist of 4 major industrial plants, a railroad line, and 3 major traffic routes. These are:

#### Industrial Sources

1. Burmah-Castrol Canada Limited  
3660 Lakeshore Boulevard West  
(Blends a variety of motor oils & lubricants)
2. Chrysler Canada Limited  
15 Brown's Line  
(Die-cast aluminum car parts)
3. Lawson Graphics Limited  
3620 Lakeshore Boulevard West  
(Printing and graphics operations)
4. PPG Canada Limited  
3730 Lakeshore Boulevard West  
(Paint and resin manufacture)

#### Railroad

Canadian National Railroad Mainline  
(Heaviest rail traffic in Canada)

#### Major Roads

Brown's Line  
Lakeshore Boulevard West  
Queen Elizabeth Way

Their locations in relation to the School are shown in Figure 1. Information about the operation of these sources during this survey is presented in Appendix A.

Map of Christ the King School Area

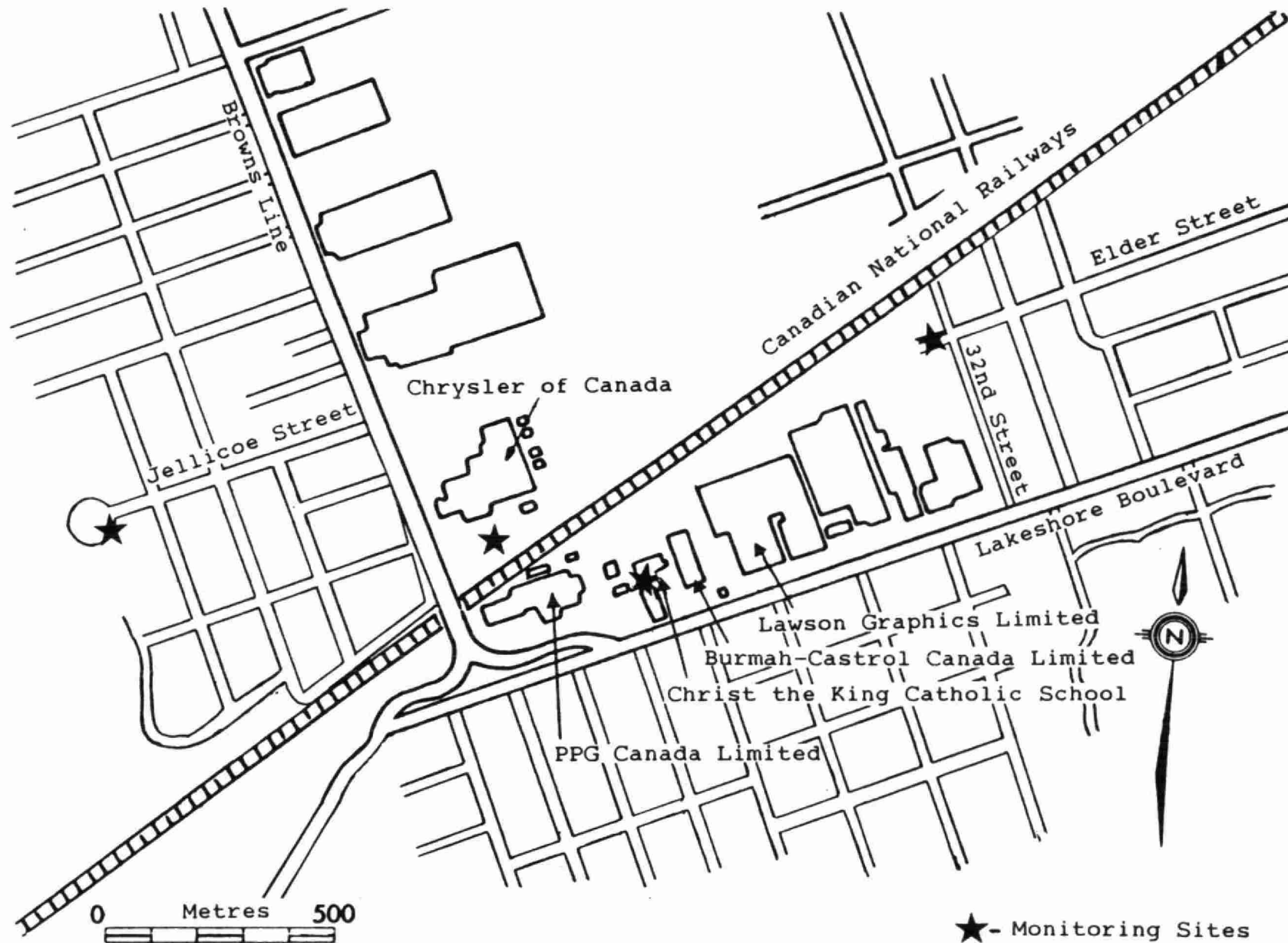


Figure 1



### 2.3 Instrumentation

Mobile Air Monitoring Units (MAMu's) #1 and #2 were used for this survey. Both units are sophisticated mobile laboratories which are capable of monitoring common contaminants, meteorological parameters, and 141 different organic compounds. The common contaminants monitored during this survey were:

- Nitric Oxide (NO)
- Nitrogen Dioxide (NO<sub>2</sub>)
- Oxides of Nitrogen (NO<sub>x</sub> = NO + NO<sub>2</sub>)
- Sulphur Dioxide (SO<sub>2</sub>)
- Total Reduced Sulphur Compounds (TRS)
- Carbon Monoxide (CO)
- Ozone (O<sub>3</sub>)
- Total Hydrocarbons (THC)
- Non-methane Hydrocarbons (TH-M)
- Methane (CH<sub>4</sub>)

The monitor for total and non-methane hydrocarbons supplemented the measurement of individual organics made by the dual capillary gas chromatograph (GC) in each MAMu. The specific instruments used in each MAMu are summarized in Tables 1 and 2.

To measure individual organics at very low concentrations (i.e. around 1 microgram per cubic metre (ug/m<sup>3</sup>) of air), ambient air was drawn through a Trace Organic Preconcentrator (TOP) unit. In the TOP, organics in the air were adsorbed on a Carbotrap-Spherocarb cartridge, then thermally desorbed and prefocused in a nickel loop which was cooled to -195°C by liquid nitrogen. These prefocused organics were then flash vapourized and injected into the dual capillary column gas chromatograph where the individual organics were separated and measured by flame ionization detectors. Positive identification of the organics was performed with the help of a computer which was interfaced with the gas chromatograph and which could compare the results from the two columns with a library established from prior calibration tests.

During periods of unattended operation, other organic samples were collected by sequential sampler units. These units drew ambient air sequentially through a series of Carbotrap-Spherocarb cartridges. The automatic timer feature of these units was set for one or eight hour sampling periods. The exposed cartridges were removed, sealed and refrigerated until they were analyzed at the 880 Bay Street laboratory using a similar dual capillary column gas chromatograph system as in the MAMu's but with the added feature of a quadrupole mass spectrometre.

## 2.4 Monitoring Programme

A three week comprehensive monitoring programme was undertaken from May 11 to May 29, 1987. This programme was varied to ensure that collected samples would adequately represent each monitoring period (daytime, overnight, weekend, and early morning) and to utilize the available equipment and manpower to their fullest. In support of this monitoring programme, abatement staff from Central Region checked the potential sources on each monitoring day to determine if any abnormal operating conditions existed and toured the neighbourhood to detect any odours.

Early on May 11, all equipment was checked and the instruments of both MAMu's were calibrated at the 880 Bay Street laboratory. The MAMu's were driven to the survey area and MAMu#2 was positioned in the yard of Christ the King Catholic School. MAMu#1 went to the neighbourhood control site near the west end of Jellicoe Street. At these sites, both MAMu's operated on shoreline power (i.e. connected to Etobicoke Hydro). This meant that the on-board gasoline generators were not used and thus there were no emissions from these units to contaminate the ambient air samples.

On May 11, an open house was also held between 4 and 7 pm at the School to explain the aims of this survey and to answer any questions from residents and parents.

### 2.4.1 The 72-Hour Programme

Because the residents of Etobicoke expressed concerns that a regular workday monitoring programme would NOT cover the hours of maximum occurrence of odours (evenings or early mornings), a 72-hour continuous monitoring programme was requested and implemented almost immediately during this survey. Thus, the first phase of the survey consisted of a 72-hour continuous monitoring programme which began at noon on Tuesday, May 12 and ended Friday, May 15. This 72-hour monitoring programme demanded that staff members be on-site; all analyzers be scrutinized and if needed, calibrated; and that ambient air sampling would be undertaken by ALL analyzers housed in the monitoring units (i.e. the ambient air would be screened for all 141 different organics by the gas chromatographic systems and up to 10 common contaminants by the dedicated continuous gas analyzers; and records were to be made of the relevant ground-based meteorological parameters). MAMu#2 at the School was manned continuously during this period and collected one-hour GC samples every hour. MAMu#1 at the Jellicoe site was essentially unmanned except for periodic visits to check and calibrate the instruments. A sequential sampler was used at this second site to collect 8-hour samples of volatile organics which were later analyzed at the 880 Bay Street laboratory.

Since no abnormally high readings were obtained during this period, the rest of the survey concentrated on daily monitoring but was supplemented by other special monitoring programmes described herein.

#### 2.4.2 Single Source Monitoring

Single source monitoring was undertaken on four days; May 20, 27, 28 and 29. For this programme, staff members manned both MAMu's. At least one unit was mobile to enable concurrent upwind and downwind monitoring of a particular source and all instruments were operational.

#### 2.4.3 Weekend Monitoring

For the first weekend (which included Victoria Day) of monitoring, MAMu#2 was at the School and MAMu#1 was at the Jellicoe site. The MAMu's were unmanned and only common contaminant and meteorological data were collected.

During the second weekend from May 22 to May 25, this monitoring programme was expanded to include a sequential sampler at each site. Each of these units collected nine 8-hour GC samples during this second weekend.

#### 2.4.4 Early Morning Monitoring

Solvents and other supplies are delivered to PPG of Canada Limited during the mornings between the hours of 5 and 7am. Concerns were expressed regarding this morning activity and the possibility of emissions from these deliveries impinging on School property. In order to address these concerns, three one-hour GC samples were acquired during the mornings of this survey (except for mornings of the 72-hour programme) between 4am and 7am at Christ the King Catholic School and these were later analyzed at the 880 Bay Street laboratory.

#### 2.4.5 Evans Avenue Air Quality

Finally, to supplement all the air quality data acquired by the two monitoring units during this survey, a daily synopsis of the data acquired at the Ministry's permanent air quality monitoring station on Evans Avenue (near Arnold) will also be presented in this report. The instrumentation for the common contaminants at this station is similar to the instrumentation in the MAMu's. This station is located 3 km northeast of the School and approximately 0.1 km south of the Queen Elizabeth Way.

### 3.0 Discussion of Results

#### 3.1 Daily Synopsis & Meteorology

##### Monday, May 11

A low pressure area was centered over Lake Superior and from this system, a warm front extended southeastwards through Lake Ontario. This warm front brought moist and unstable air into the Etobicoke area. The winds were moderate (up to 20km/hr) and southwesterly throughout most of the day. At noon, the monitoring units arrived in the area and were immediately driven to the semi-permanent monitoring sites: MAMu#1 to Jellicoe Street and MAMu#2 to Christ the King Catholic School. All instrumentation was checked and calibrated and overnight monitoring of the common gaseous contaminants was started.

##### Tuesday, May 12

The cold front associated with this low pressure system moved through the area overnight. The winds continued to veer and by early morning, they were northwesterly. Behind this cold front, the air mass was dry and stable. It was a clear, sunny day in Etobicoke. All instruments were recalibrated and at noon, the 72-hour continuous monitoring programme commenced. Apart from the continuous monitoring of the common contaminants, one-hour GC samples were collected and analyzed every hour at the School and consecutive eight-hour GC samples were collected at the Jellicoe site.

##### Wednesday, May 13

A high pressure area followed behind this cold front. Because this high pressure system was now located just to the east of Lake Ontario, the air mass remained dry and stable. The winds became lighter (less than 5 km/hr) and were generally easterly throughout most of the day. It was a clear sunny day in Etobicoke and the 72-hour monitoring programme continued.

##### Thursday, May 14

A northeast-southwest orientated trough of low pressure was situated over Lake Superior and was forecasted to move to lie just east of Lake Ontario by early Friday. It was clear and sunny and the winds were still light and easterly throughout most of the day. As the evening approached, cloud moved in and the winds veered towards the west and increased in velocity. At 6pm, rain commenced and the winds were westerly at about 25 to 30 km/hr. The 72-hour monitoring programme continued.

##### Friday, May 15

Heavy rain and lightning were present in the Etobicoke area at 1am. By 2am, the storm had subsided. The winds were still brisk (20 to 30 km/hr) but now were from the northwest. By 6am, the air

mass had dried out and the weather became cool and sunny. A high pressure area was located just south of Lake Superior and was forecasted to influence the weather of Etobicoke for the weekend. The 72-hour monitoring programme ended at noon. The analyzers were recalibrated and a continuous weekend monitoring programme was started for measuring ambient air concentrations of only the common contaminants.

#### Saturday, May 16

The aforementioned high pressure area dominated the weather in Etobicoke. The winds were light and variable throughout most of the day (a nocturnal inversion followed by light southeasterly winds until about mid-afternoon and light westerly winds in the evening). The temperature maximum was only 22 °C and the air mass was dry and stable. The weekend monitoring continued.

#### Sunday, May 17

The high pressure area was still influencing the weather. A nocturnal inversion was again present overnight. By 9am, the winds had become westerly with velocities up to 10 km/hr. The air mass was still dry and stable and it was very hot with temperatures approaching 33 °C. The weekend monitoring continued.

#### Monday, May 18

A warm front extending from a low pressure area located just east of Lake Superior was pushing into the Etobicoke area. The winds were easterly and moderate (up to 15 km/hr) throughout most of the day. The temperature had dropped considerably and now the maximum was only in the mid-teens. The weekend monitoring programme continued.

#### Tuesday, May 19

The low pressure area had passed to the south and now a high pressure area located over Hudson Bay was influencing the weather in Etobicoke. The winds were easterly and brisk (up to 30 km/hr). It was overcast and the air mass was becoming moist and unstable. The weekend monitoring programme was terminated and all analyzers were recalibrated. Routine monitoring recommenced just before noon.

#### Wednesday, May 20

The high pressure area had now moved into central Quebec. The air mass in southern Ontario was still moist but now it was stable. Light rain was falling in the morning and it was cool with temperatures in the mid-teens. The winds were light (up to 10 km/hr) and easterly. Since the School site was downwind of Lawson Graphics and Burmah-Castrol, a programme designed for single source monitoring was followed on this day. MAMu#1 moved to 32nd Street and Elder Avenue in the afternoon so as to be upwind of these two companies and concurrent monitoring was undertaken with MAMu#2

remaining at the School.

Thursday, May 21

A weak warm front was situated over southern Ontario on this day. It was overcast and the winds were southeasterly and light (up to 10 km/hr). Instrumentation recalibrations and longterm monitoring programmes were followed at both monitoring sites.

Friday, May 22

A well defined cold front was aligned northeastward through Lake Michigan in the early morning. This front was expected to move slowly southeastward throughout the day and influence the weather in southern Ontario during the weekend. The weather prognosis was for very warm, humid and hazy conditions with scattered showers and thunderstorms. The winds were southerly and light (up to 10 km/hr). All analyzers were rechecked and the second weekend of monitoring of the common contaminants was started by both monitoring units. In addition and commencing at 2 pm, consecutive 8-hour GC cartridges were exposed at these two sites and this cartridge programme ran for the next 72 hours (ending Monday at 2pm) with 18 samples being collected.

Saturday, May 23

The cold front had pushed through overnight and now the winds were northwesterly and moderate (up to 20 km/hr). Overcast conditions and light rain were present during the morning. There was a clearing trend behind this front and the air mass became drier and more stable. By mid-afternoon, the weather had improved to sunny with some scattered clouds. The weekend monitoring continued.

Sunday, May 24

A high pressure area was pushing into Ontario from the Prairies. It was a sunny and cool day. The winds were light and northerly. The weekend programmes continued.

Monday, May 25

This high pressure area was now centered over Georgian Bay. The air mass over southern Ontario was moist and stable. It was overcast and humid in Etobicoke and the winds were southeasterly and light (10 to 15 km/hr). The weekend monitoring programmes were halted and all analyzers were recalibrated. Another longterm monitoring programme was started at each site.

Tuesday, May 26

The high pressure area had pushed southeastward into the New England States. The air mass was still moist and stable over Etobicoke. Rain (heavy at times) commenced at 10:45 am and the winds were southeasterly and light (up to 10 km/hr). The monitoring programme continued at both sites.

Wednesday, May 27

A west-east orientated warm front tracked northward through Southern Ontario during the early morning. At 10:30 am, it was hot (temperature in the high twenties), humid and hazy in Etobicoke. The winds were light and southerly. A monitoring programme centered on the identification and quantification of gaseous emissions from PPG of Canada Limited was followed on this date.

Thursday, May 28

The warm front had pushed further northeastward and the weather was similar to that of Wednesday. It was still hot, humid and hazy. The winds were light and southerly and once again, an investigation of the air quality downwind of PPG of Canada Limited was undertaken on this date.

Friday, May 29

The warm front was now quasi-stationary and aligned through northcentral Ontario. The air mass over Etobicoke was still moist and unstable. Moderate southwesterly winds were present and it was hot, humid and hazy. This was the last day of monitoring for this air quality survey and at noon, this survey was terminated.



### 3.2 The 72-Hour Programme

The 72-hour monitoring programme commenced at noon on May 12 and continued until noon on May 15. During this time, MAMu#1 was unmanned whereas MAMu#2 was staffed continuously; 8-hour GC samples were collected at the Jellicoe site; 1-hour GC samples were collected and analyzed at the School site by the field GC of MAMu#2; and both MAMu's remained at their respective sites throughout the period enabling continuous acquisition of ground level concentrations for the common contaminants. The monitoring periods (MP) that contain these times are A113 for the data acquired by MAMu#1 and B124 for the data acquired by MAMu#2 (see Table 3).

From the acquired air quality data, low concentration levels were measured. For the common contaminants (refer to Tables 4 and 5), the overall average ground level concentrations of NO<sub>2</sub>, CO, SO<sub>2</sub>, O<sub>3</sub> and TH-M acquired at the Jellicoe site were only 0.02, 0.66, 0.01, 0.03 and 0.30 ppm (parts per million) respectively. The total hydrocarbon analyzer was inoperative at the School site but nevertheless for the other common contaminants measured at this site, the overall average ground level concentrations were similar to those reported for the Jellicoe site. For example, an overall average ground level concentration of 0.03 ppm was recorded for NO<sub>2</sub>; 0.42 ppm for CO; 0.01 ppm for SO<sub>2</sub>; and 0.03 ppm for O<sub>3</sub>. The air quality data recorded at the Evans Avenue station for this same time period was also similar: 0.06 ppm for NO<sub>2</sub>; less than 1 ppm for CO; less than 0.01 ppm for SO<sub>2</sub> and 1.6 ppm for THC.

The maximum one-hour average ground level concentrations measured at the School and Jellicoe sites were 0.06 and 0.05 ppm for NO<sub>2</sub>, 2.07 and 2.26 ppm for CO, 0.03 and 0.02 ppm for SO<sub>2</sub>, and 0.05 and 0.08 ppm for O<sub>3</sub>. At the Evans site, the maximum one-hour average concentrations were 0.08 ppm for NO<sub>2</sub>, 2 ppm for CO, 0.02 ppm for SO<sub>2</sub> and 2.3 ppm for THC.

During this period, 72 one-hour GC samples were acquired at the School and 9 eight-hour GC samples were collected at the Jellicoe site. The School samples were immediately analyzed by the field GC of MAMu#2 whereas the Jellicoe samples were later analyzed by the GC/MS system at the Branch's main laboratory. In order to make comparisons between these two data sets, the averages of 8 consecutive one-hour School samples were computed. These 8 hour averages corresponded to the same time intervals as the 8-hour Jellicoe samples. From this comparison data set (Table 8), the overall average total organic concentration determined from the 72 samples at the School was 74 ug/m<sup>3</sup> and from the 9 samples collected at the Jellicoe site, 61 ug/m<sup>3</sup>. The respective average alkane and aromatic concentrations were 40 and 25 ug/m<sup>3</sup> for the School and 32



and 23 ug/m<sup>3</sup> for the Jellicoe samples and these two fractions accounted for approximately 89% of the total organic concentrations. From these analyses, the more dominant organics were the low boiling alkanes (propane, butane, 2-methylbutane, pentane, and hexane) and the common aromatics (BTX's - benzene, toluene and xylenes) with average individual concentrations less than 8 ug/m<sup>3</sup>. As noted in Table 7, these individual concentrations were considered to be normal urban levels.

Thus from all of the air quality data acquired at the Jellicoe and School monitoring sites during this 72-hour period: no Ministry of the Environment Air Quality Criterion or Guideline was exceeded; similar results were obtained at both sites (and even at the Evans Avenue site for the common contaminants); and all were typical of an urban environment.

Another point of interest was the nitrogen dioxide results as acquired at the Jellicoe and School sites. From the wind frequency rose analyses (see appendix) of these two monitoring periods (A113 and B124), calm winds (ie. less than 3km/hr) were recorded for approximately 40% of the time and the three major wind directions were north (25% of the time recorded at Jellicoe and 13% of the time recorded at the School), east (13% at both sites) and northwest (10% at Jellicoe and 14% at the School). From the NO<sub>2</sub> results, the glc's did not exceed the Ministry of the Environment Air Quality Criterion for this contaminant and no preferred source(s) direction was obvious.

### 3.3 Single Source Monitoring

During the afternoon of May 20th, the winds were easterly and ranged between 10 to 20 km/hr. Concurrent monitoring of the companies to the east of the School was undertaken at this time. Monitoring for the common contaminants started at 9:40am at the School (reference to MP B202) and continued until after 4:40pm. Between 10am and 2:30pm, common contaminant data (reference to MP A202) and 3 one-hour GC samples were acquired by MAMu#1 at the Jellicoe site. After 2:30pm, MAMu#1 moved to the corner of 32nd Street and Elder Avenue, upwind of the companies to the east of the School. One one-hour GC sample and approximately 2 hours of common contaminant data (reference to MP A203) were acquired at this upwind site. Since the Jellicoe site was outside the impingement zone of gaseous emissions from the companies to the east of the School, the data acquired at this site during the earlier part of the day have been treated as upwind data for these industries.

As can be seen from Table 4 and 5, no significant differences were measured for the common contaminants at the Jellicoe, School or Elder Avenue monitoring sites during the morning or afternoon on this date. The overall average glc's for NO<sub>2</sub>, CO, TH-M and O<sub>3</sub> during these monitoring periods were 0.02, 1, 1, and 0.02 ppm respectively and no SO<sub>2</sub> was detected at any time.

For the GC data (reference to Table 9), the average total organic concentration determined from 4 one-hour samples collected at the School was 204 ug/m<sup>3</sup> with the alkane fraction comprising 45% of these concentrations and the aromatics 40%. For the aromatics, the average BTX concentrations were 43 ug/m<sup>3</sup> (benzene), 18 ug/m<sup>3</sup> (toluene) and 39 ug/m<sup>3</sup> (xylenes). For the three one-hour samples acquired at the Jellicoe site, the average total organic concentration was 174 ug/m<sup>3</sup> with the alkane fraction comprising 54% of these totals and the average aromatic fraction 32%. For the 32nd and Elder Street upwind sample, the total organic concentration was 141 ug/m<sup>3</sup> with the alkanes comprising 58% of this total and the aromatics 30%. From these eight samples, the alkane fractional concentrations were similar in both the upwind and downwind samples (ranging from 75 to 113 ug/m<sup>3</sup>) and the only variance was in the aromatic concentrations (ranging from 42 to 69 ug/m<sup>3</sup> for an upwind average of 52 ug/m<sup>3</sup> and from 41 to 100 ug/m<sup>3</sup> for a downwind average of 82 ug/m<sup>3</sup>). The low boiling alkane concentrations were uniform throughout all of these samples and each were nominally below 20 ug/m<sup>3</sup>. For the BTX's: benzene was essentially identical throughout all eight samples with concentrations of 4 or 5 ug/m<sup>3</sup>; toluene was also essentially identical with concentrations between 12 and 22 ug/m<sup>3</sup>; but the xylenes depicted some variance with concentrations of 10 to 22 ug/m<sup>3</sup> (an average of 16 ug/m<sup>3</sup>) in the upwind samples and

concentrations of 13 to 51  $\mu\text{g}/\text{m}^3$  (an average of 39  $\mu\text{g}/\text{m}^3$ ) in the downwind samples. Apart from the BTX's, some enhancement of ethylbenzene was also detected in the downwind samples. For the upwind samples, the concentrations of ethylbenzene ranged from 3 to 6  $\mu\text{g}/\text{m}^3$  however for the downwind samples, the range was from 3 to 12  $\mu\text{g}/\text{m}^3$ . However, these are very low concentrations since the one-hour Ministry of the Environment Air Quality Criterion for this contaminant is 4,000  $\mu\text{g}/\text{m}^3$ . Some dichloromethane (methylene chloride) was also detected in three of the four downwind samples and the concentrations were between 3 and 5  $\mu\text{g}/\text{m}^3$ . None was detected in the upwind samples and the Ministry of the Environment Air Quality Criterion for this contaminant is 100,000  $\mu\text{g}/\text{m}^3$ . No styrene was detected in any of these eight samples. From these results, the industries to the east of the School appear to be a source of xylenes but the concentrations are very low. The source contributions of xylenes appear to be only 20 to 30  $\mu\text{g}/\text{m}^3$  whereas the Ministry of the Environment Air Quality Criterion for this contaminant is 2,300  $\mu\text{g}/\text{m}^3$ .

During the afternoon of May 27, the winds were moderate (up to 12 km/hr) and southeasterly at the School. MAMu#2 remained at the School whereas MAMu#1 moved to the south parking lot at the Chrysler plant and was directly downwind of PPG of Canada Limited. As noted by monitoring periods A271 and B272, concurrent downwind and upwind monitoring of PPG of Canada Limited was undertaken for approximately one hour during this afternoon. From the common contaminant data (Tables 4 and 5), no appreciable differences were noted between the upwind and downwind measurements. The glc's of  $\text{NO}_2$ , CO,  $\text{SO}_2$  and  $\text{O}_3$  were all at regular urban levels.

From the analysis of the two GC samples acquired on this afternoon, the total organic concentration for the downwind sample was 226  $\mu\text{g}/\text{m}^3$  whereas for the upwind, it was only 53  $\mu\text{g}/\text{m}^3$ . The magnitude of the alkane fraction was essentially twice as great in the downwind sample as in the upwind sample (74 versus 37  $\mu\text{g}/\text{m}^3$ ) but the most dramatic difference was in the aromatics (136  $\mu\text{g}/\text{m}^3$  in the downwind sample versus only 10  $\mu\text{g}/\text{m}^3$  in the upwind) and the number of individual organics identified in these two samples (58 accounting for only 61% of the total peak area on the chromatogram for the downwind sample versus only 26 but accounting for 90% of the peak area in the upwind sample). The concentrations of the individual alkanes were low and were nominally less than 20  $\mu\text{g}/\text{m}^3$ . Equal concentrations of the low boiling alkanes were noted in both samples but in the downwind sample, concentrations of the higher alkanes were also detected (most noteworthy were nonane and decane at 6  $\mu\text{g}/\text{m}^3$  each, undecane at 7  $\mu\text{g}/\text{m}^3$  and dodecane at 14  $\mu\text{g}/\text{m}^3$ ). For the aromatics, the benzene concentration was low and similar in both samples (3 and 5  $\mu\text{g}/\text{m}^3$ ) whereas the toluene, ethylbenzene and xylenes concentrations were higher in the downwind sample (4 and 15  $\mu\text{g}/\text{m}^3$ ; 1 and 16  $\mu\text{g}/\text{m}^3$ ; 2 and 68  $\mu\text{g}/\text{m}^3$  respectively).

During the afternoon of May 28, another investigation of emissions from PPG of Canada Limited was undertaken by the MAMu's. The winds were southerly and light and it was hot, humid and hazy. MAMu#1 remained at the Jellicoe site whereas MAMu#2 moved to the Chrysler south parking lot. Barely perceptible odour was encountered at this parking lot which the staff determined was originating from PPG of Canada Limited. Just over one hour of common contaminant data and only one GC sample were acquired at this downwind site (reference to MP B281). The data acquired by MAMu#1 at the Jellicoe site were considered to be upwind data for this investigation (reference to MP A282).

From Tables 4 and 5, very little difference was noted in the glc's of the common contaminants as measured during these two periods. The concentrations were all below the Ministry of the Environment Air Quality Criterion and were indicative of an urban environment.

From the two GC samples, the total organic concentration determined from the downwind sample was  $337 \text{ ug/m}^3$  and for the upwind sample,  $237 \text{ ug/m}^3$ . The magnitude of the alkane fraction was identical in both samples ( $173$  and  $165 \text{ ug/m}^3$ ) but the aromatic fraction of the downwind sample was twice that determined for the upwind sample ( $103$  versus  $55 \text{ ug/m}^3$ ). Sixty-six different organics were detected in the downwind sample and 53 were detected in the upwind sample. The more abundant individual organics were the low boiling alkanes whose individual concentrations were usually less than  $20 \text{ ug/m}^3$ . However the most abundant alkane was butane with a concentration of  $45 \text{ ug/m}^3$  in the upwind sample and  $32 \text{ ug/m}^3$  in the downwind sample. For the aromatics, benzene was similar in both samples ( $10$  and  $11 \text{ ug/m}^3$ ); twice as much toluene was detected in the downwind sample ( $36$  versus  $16 \text{ ug/m}^3$ ); three times as much xylenes were detected in the downwind sample ( $32$  versus  $12 \text{ ug/m}^3$ ); and low concentrations of ethylbenzene were detected in both samples ( $8$  versus  $2 \text{ ug/m}^3$ ). No styrene was detected in either sample. However some dichloromethane ( $9 \text{ ug/m}^3$ ) was detected in the downwind sample.

During the morning of May 29, the winds were westerly and in the  $10$  to  $15 \text{ km/hr}$  range. The School was directly downwind of PPG of Canada Limited. The Jellicoe site was upwind. This was the last day for this survey and as such, only a morning monitoring programme was followed. One one-hour GC sample was acquired at each site and the continuous common contaminant data are contained in MP's A282 and B293.

Again, no clear differences could be ascertained from the common contaminant data sets (Tables 4 and 5) for these two monitoring periods and the data were typical of an urban

environment. The maximum one-hour average glc's reported for  $\text{NO}_2$ ,  $\text{CO}$ ,  $\text{SO}_2$  and  $\text{O}_3$  were 0.09, 2.2, less than 0.01 and 0.07 ppm respectively. (i.e. no Ministry of the Environment Air Quality Criterion were exceeded.)

From the downwind GC sample, the total organic concentration was determined to be twice that of the upwind sample (324 versus 174  $\text{ug/m}^3$ ). The alkane fraction was essentially identical in both samples (95 and 113  $\text{ug/m}^3$ ) but the aromatic concentration in the downwind sample was four times greater than in the upwind sample (178 versus 45  $\text{ug/m}^3$ ). The magnitudes of the individual low boiling alkanes were identical in both samples and each were usually less than 20  $\text{ug/m}^3$ . For the aromatics, benzene was the same in both samples (4 and 9  $\text{ug/m}^3$ ); three times as much toluene was detected in the downwind sample (38 versus 13  $\text{ug/m}^3$ ); and ten times as much xylenes and ethylbenzene were detected in the downwind sample (93 versus 9  $\text{ug/m}^3$  for the xylenes and 23 versus 2  $\text{ug/m}^3$  for the ethylbenzene). But for all of these organics, the concentrations were considered to be very low and did not approach any of the Ministry of the Environment Air Quality Criteria. For example, the 24-hour Criterion for benzene is 3,300  $\text{ug/m}^3$ ; the one-hour Criterion for toluene is 2,000  $\text{ug/m}^3$ ; the one-hour Criterion for xylenes is 2,300  $\text{ug/m}^3$ ; the one-hour Criterion for ethylbenzene 4,000  $\text{ug/m}^3$ ; and the one-hour Criterion for dichloromethane (methylene chloride) is 100,000  $\text{ug/m}^3$ .

From the analyses of the air quality data acquired downwind of PPG of Canada Limited, this plant appeared to be a source of aromatics (toluene, xylenes and ethylbenzene) but the concentrations were typical of urban levels (i.e. each being less than 100  $\text{ug/m}^3$ ). No Ministry of the Environment Air Quality Criteria were exceeded or even approached for these measurements and no appreciable differences were observed for the common contaminants during either the upwind or downwind monitoring programmes.

### 3.4 Weekend Monitoring

The first weekend of this survey was the long weekend containing Victoria Day (May 18). Commencing at noon on Friday (May 15) and continuing until Tuesday morning, air quality data pertaining only to the common contaminants and the meteorological parameters were collected at the Jellicoe and School sites. As can be seen from Tables 4 and 5 and as referenced by monitoring periods A152 and B152, approximately 93 hours of common contaminant data were acquired during this time. The overall ground level concentrations (glc's) for the common contaminants were low and indicative of an urban environment. For example, the overall average glc for CO was only 0.4 ppm as measured at the School and 0.5 ppm at Jellicoe and as for NO<sub>2</sub>, it was 0.03 ppm at the School and 0.02 ppm at Jellicoe.

However upon closer examination of the data, at just before midnight on May 17th, higher glc's of NO<sub>2</sub> were recorded at the School site. From 9pm to 11pm, the maximum one-hour average glc's of NO<sub>2</sub> ranged from 0.07 ppm to 0.11 ppm. The Ministry of the Environment Air Quality Criterion for this contaminant is 0.20 ppm for a one-hour average concentration. The total hydrocarbon and carbon monoxide concentrations showed slight increases at this time as well. The winds were light and veered from northwest to southeast. At the Jellicoe site, the winds were also light and they veered from the northwest to the east. The maximum one-hour average glc of NO<sub>2</sub> ranged from 0.05 to 0.07 ppm; for CO, they ranged from 0.7 to 1.1 ppm; and for THC, they ranged up to 2.6 ppm. No SO<sub>2</sub> was detected at either site during this time (ie. the ambient concentrations were less than 0.01 ppm). At the Evans Avenue site, the same pattern was also observed. The maximum one-hour average glc's for NO<sub>2</sub>, CO and THC were 0.12, 2, and 1.9 ppm respectively and no SO<sub>2</sub> was detected. From wind and NO<sub>2</sub> concentration frequency rose analyses for this entire long weekend, no preferred source(s) direction was obvious for NO<sub>2</sub> and it appears as if this contaminant was ubiquitous to this area. Thus the most plausible source of this elevated NO<sub>2</sub> would be emissions from the regular buildup of vehicular traffic along the Gardiner and Queen Elizabeth Expressways and the Brown's Line area in general and perhaps the train traffic along the Canadian National Railroad mainline.

The second weekend of monitoring began at noon on Friday, May 22 and ended on Monday morning, May 25. Continuous measurements of the common contaminants were acquired at the Jellicoe (MP A222 commencing on Friday at 9:53am) and at the School (MP B223 commencing on Friday at 3:34pm) sites. In addition and commencing at 2pm, consecutive 8-hour GC samples were also collected at each site throughout this period.



For the common contaminants (Tables 4 and 5), no significant concentrations were detected. For both sites, the maximum overall average glc's for  $\text{NO}_2$ , CO,  $\text{SO}_2$  and  $\text{O}_3$  were only 0.03, 0.7, less than 0.01 (or not detected), and 0.02 ppm respectively and the maximum one-hour averages were 0.08, 1.7, less than 0.01, and 0.06 ppm respectively. At Evans Avenue, the maximum one-hour average glc's reported on this weekend were similar, i.e.: 0.09 ppm for  $\text{NO}_2$ , 3 ppm for CO and 0.02 ppm for  $\text{SO}_2$ .

Of the 18 GC samples, 2 samples were cracked and thus could not be analyzed. From the remaining 16 samples, the total organic concentrations were low ranging from 17 to 107  $\mu\text{g}/\text{m}^3$  (an average of 43  $\mu\text{g}/\text{m}^3$ ) for the Jellicoe samples and ranging from 17 to 131  $\mu\text{g}/\text{m}^3$  (an average of 71  $\mu\text{g}/\text{m}^3$ ) for the School samples (please refer to Table 10). On the average, the alkanes comprised 56% of the total organic concentrations at the Jellicoe site and the aromatics 36%. At the School site, the alkanes comprised 44% of the totals and the aromatic fraction 46%. An average of 45 different organics were detected in the samples collected at the Jellicoe site and an average of 50 different organics were detected in the samples collected at the School. None of these individual organics were detected at concentrations in excess of 11  $\mu\text{g}/\text{m}^3$  and 70 to 75% of the peak areas of each chromatogram were accounted for by the libraries of the GC systems.

From this air quality data, no Ministry of the Environment Air Quality Criteria were exceeded; the air quality at each site were similar; and the results were deemed to be indicative of an urban environment.

As with the first weekend discussion, wind and  $\text{NO}_2$  concentration frequency rose analyses for the Jellicoe and School sites displayed similar features. Firstly, the winds were calm (ie. less than 3 km/hr) for approximately 85% of the time at the Jellicoe site and for 55% of the time at the School. Secondly, the  $\text{NO}_2$  directional concentrations at the Jellicoe site were inconclusive. (However at the School, the more dominant directions for  $\text{NO}_2$  sources appeared to be south and southeasterly.) And finally, the measured glc's for  $\text{NO}_2$  were very low at both sites. Thus from these data, it again appeared as if there were no discrete, well defined source(s) of  $\text{NO}_2$  and that the most plausible source would be vehicular traffic.

### 3.5 Early Morning Monitoring

With respect to the morning deliveries at PPG of Canada Limited, one-hour GC cartridge samples were collected at the School covering the time span of 4am to 7am. Apart from the 72-hour and the weekend programmes during which samples were taken during these deliveries, other samples were also acquired. The first two sets of results were discussed in other sections of this report. This section will only discuss the data acquired during the mornings of May 13, 14, 15, 22, 27, 28 and 29.

Apart from May 15 and 29th, the winds were either calm or light and variable during these early morning hours. On the 15th, the winds were brisk (15 to 20 km/hr) from the northwest and on the 29th, they were light northwesterly.

For the common contaminants measured during these periods (Tables 4 and 5) and as listed under monitoring periods B124, B153, B253, B274 AND B282, the maximum one-hour average glc's of NO<sub>2</sub> ranged from 0.03 to 0.08 ppm; of CO, from 0.5 to 3.0 ppm; of THC, from 1.4 to 3.9 ppm and for SO<sub>2</sub>, from 0.01 ppm to 0.02 ppm.

For the GC samples (please refer to Table 11), the total organic concentrations ranged to 440 ug/m<sup>3</sup> (an average of 150 ug/m<sup>3</sup>) and on the average, 34 different organics were detected in each sample. The alkane fraction comprised 52% of the total organic concentrations and the aromatics 33%. The more dominant organics were the low boiling alkanes (propane, 2-methylpropane, butane, 2-methylbutane and pentane) with individual concentrations all less than 50 ug/m<sup>3</sup> and the common aromatics (BTX's - benzene, toluene and xylenes) with individual concentrations less than 90 ug/m<sup>3</sup>.

The two GC samples that had the heaviest concentrations were acquired during the mornings of May 13 and 28th. For the first sample, the wind had been light and northwesterly but at the time of sampling (6:30 to 7:30 am), it was calm. The total organic concentration was 363 ug/m<sup>3</sup> with the alkane fractional concentration at 166 ug/m<sup>3</sup> and the aromatic fraction at 131 ug/m<sup>3</sup>. The BTX's were 11, 46 and 45 ug/m<sup>3</sup>. For the second sample (May 28, between 4 and 5am), a nocturnal inversion had been present and there had been a gradual buildup of CO, NO<sub>2</sub> and THC in the area. The winds were calm and the maximum one-hour average glc for these common contaminants were 3.8, 0.08 and 3.9 ppm respectively. The total organic concentration was 440 ug/m<sup>3</sup> with essentially equal concentrations of the alkane and aromatic fractions (191 and 181 ug/m<sup>3</sup>). The individual alkanes were all less than 25 ug/m<sup>3</sup> and the BTX's were 9, 88 and 56 ug/m<sup>3</sup> respectively.



The lowest total organic concentrations were determined from the samples acquired during the morning of May 15th under brisk northwesterly winds. Although the School was directly downwind of PPG of Canada Limited, good atmospheric dispersion conditions prevailed. The glc's for the common contaminants were all low and the winds were in excess of 10 km/hr from the northwest. The total organic concentrations ranged from 16 to 25 ug/m<sup>3</sup> with the alkanes comprising 73% of these totals and the aromatics 24%.

In conclusion, the analyses of the morning GC samples acquired at the School revealed that no Ministry of the Environment Air Quality Criteria or Guidelines were exceeded for any of the identified and confirmed organics. The more dominant individual organics were the aromatics - benzene, toluene and xylenes.

### 3.5 Evans Avenue Data

The Central Region of the Ministry of the Environment operates a permanent air quality monitoring station on Evans Avenue near Arnold Street in Etobicoke. This station is approximately 3 km northeast of the School and the acquired air quality data are telemetered to a central computer system in Rexdale, Ontario. The instruments housed in this station were operational during this survey and some of the more pertinent data are presented in Table 6.

#### 4.0 Summary and Conclusions

At the request of the residents of south Etobicoke and the Central Region of the Ministry of the Environment, an air quality survey was conducted by Mobile Air Monitoring Units #1 and #2 of the Air Resources Branch in the Lakeshore Boulevard and Brown's Line area of Etobicoke during the last three weeks of May, 1987. The main aims of this survey were to determine the air quality in the vicinity of Christ the King Catholic School and to determine the source(s) of gaseous contaminants if elevated concentrations were measured. To fulfil these objectives, a somewhat varied air monitoring programme was followed. Odours were expected either late at night or during the early morning hours. To address this concern, a 72-hour continuous active monitoring programme was implemented during the first week at the School and at the control site on Jellicoe Avenue. There are several industries in the immediate vicinity of this School (namely, PPG of Canada Limited, Burmah-Castrol Canada Limited, Lawson Graphics Limited and Chrysler Canada Limited), a main railway line (Canadian National), and several major highways (Brown's Line, Lakeshore Boulevard and the Queen Elizabeth Way). In order to address the public's concern regarding emissions from these industries, single source monitoring was also undertaken on four different days of this survey. In addition, PPG of Canada Limited receives solvents and other supplies during the early mornings and thus another monitoring programme was developed for this scenario. Weekend monitoring programmes were also carried out to assess air quality in general and note if there were any vehicular impact in this area. Finally, comparisons were made with the results of the Ministry permanent air quality monitoring station located on Evans Avenue, approximately 3 km northeast of the School.

The instrumentation housed in these mobile air monitoring units was capable of screening the air for 141 different organics and measuring, on a continuous basis, up to 10 common contaminants as well as a complete set of ground-based meteorological parameters. Thirty-seven monitoring periods comprised this survey and 434 hours of common contaminant data and 112 cartridge samples for organic analyses were acquired.

From all of these monitoring programmes, the data indicated that no Ministry of the Environment Air Quality Criteria, Guidelines or Provisional Guidelines were exceeded for any of the measured contaminants during this survey.

Some vehicular exhaust contributions from the Queen Elizabeth Way and the other major highways were noted in the acquired data: most noteworthy were the concentrations of nitrogen dioxide ( $\text{NO}_2$  with a maximum one-hour average concentration 0.11 ppm (parts per million)) and the low boiling alkanes (propane through

hexane with concentrations up to  $50 \text{ ug/m}^3$  (micrograms per cubic metre)).

The industries to the east of the School (Lawson Graphics and Burmah-Castrol) appeared to be a source of xylenes but the concentrations were low (20 or  $30 \text{ ug/m}^3$ ).

PPG of Canada Limited appeared to be a source of aromatics; namely toluene, xylenes and ethylbenzene but the concentrations were also low (i.e. at levels less than  $100 \text{ ug/m}^3$ ).

Some dichloromethane (or methylene chloride) was detected in the vicinity of the School but the source or sources could not be determined from the data set. The concentrations measured were also low ranging up to  $20 \text{ ug/m}^3$ .

Good agreement was observed between the data sets of the Regional monitoring station at Evans Avenue and those of the mobile air monitoring units.

In conclusion, the air quality in the vicinity of Christ the King Catholic School in south Etobicoke was found to be typical of an urban environment.

## 5.0 Acknowledgements

The authors of this report wish to acknowledge and thank the following Ministry staff for their assistance, professionalism and scientific expertise in the acquisition, compilation and validation of the data presented in this report. From the Branch, Messrs. M.Sage, G.Rioual, M.Spencer, K.Smith, A.Merritt and R.Tooley and from the Region, Mr. D. Hann.

The authors also wish to thank the following Ministry staff for their timely and constructive review of this report. From the Branch, Drs. E.Singer, S.Linzon, M.Lusis, W.Chan and Mr. L.Shenfeld and from the Region, Messrs. B.Singh and J.Kawasaki.

Finally, but certainly not the least, sincere thanks is extended to the residents of Etobicoke and the Principal (Mr. C.McAfee), staff and students of Christ the King Catholic School for their hospitality, support and understanding as this survey was being conducted in their area.

APPENDIX A

## APPENDIX A

### SOURCE OPERATING INFORMATION: As Submitted by Companies to Region Prior to Survey

1. **Burmah-Castrol Canada Limited, 3660 Lakeshore Blvd. West**
  - Blending Operation shift 8:00-4:30/5:00 Monday to Friday.
  - Packaging - 2 shifts daily, 8:00 a.m.-12:30 a.m. Monday to Friday.
  - Blow molding (Packaging) 24 hours/7days/week.
  - No production/blending on May 18, 1987.
  - No scheduled weekend shift.
  - No unusual maintenance activity scheduled.
2. **Chrysler Canada Limited, 15 Brown's Line**
  - 24-hour operation; shifts: 8-4, 4-12, 12-8.
  - Company will most likely be operating on May 18, 1987.
  - The furnaces are charged (aluminum) every 2-3 hours.
3. **Lawson Graphics, 3620 Lakeshore Blvd. West**
  - Shifts: 11:00-7:00, 7:00-3:00, 3:00-11:00 Monday to Friday. (sometimes there is a lead shift on Sunday night.)
  - \* Production generally ceases around 5:00 p.m. on Fridays.
  - Production on May 18, 1987 is not scheduled at this time, but is subject to orders.
  - All presses will be running during the survey period.
  - Presses No. 381 and No. 385 will be controlled by present equipment and will not likely be connected to the new TEC afterburner until June, 1987. The new Press No. 382 is up and running and controlled by the new TEC afterburner.
  - There is no scheduled weekend production at this time.
  - There is no unusual maintenance activity scheduled.
4. **PPG Canada Inc., 3730 Lakeshore Blvd. West**
  - Resin Plant shifts: 12:00-8:00, 8:00-4:00, 4:00-12:00 Monday to Friday.
  - Paint Plant shift: 8:00-4:30 Monday to Friday.
  - Bulk receipts of monomers and TDI occur between 5:00-7:00 a.m. daily.
  - Plant shutdown on May 18, 1987.
  - No weekend shifts scheduled at this time; however this is dependent on orders.
  - Paint production is equal to or up by 25% from August 1986 survey period.
  - Resin production is down by approximately 25% from the August 1986 survey period.
  - Resin Kettle No. 3 is down for maintenance and will not be

operational during the survey.

- No unusual maintenance activity scheduled.

#### 5. Rail Traffic

- 117 trains daily, Monday to Friday along the Toronto to Oakville line.
- 65 GO trains, 28 VIA (including Amtrack), 24 freight (18 switchers-not long, and 6 manifest freight- long haul through traffic).
- Freight traffic is reduced by approximately one third on the weekends.
- GO traffic is reduced by approximately 50% on weekends.



APPENDIX B

TABLE #1

## THE INSTRUMENTATION OF MOBILE AIR MONITORING UNIT #1

Instrument	Manufacturer	Analytical Technique	Full Scale Sensitivity
THC, CH <sub>4</sub> , TH-M analyzer	Ingenieur-Produktions-Gruppe Munchen (IPM) RS-t	Dual flame ionization	50 ppm THC (as CH <sub>4</sub> )
H <sub>2</sub> S, SO <sub>2</sub> , NO <sub>x</sub> sources	Hartmann & Braun Prufgasgenerator	N/A	N/A
TRS/SO <sub>2</sub> analyzer	Monitor Labs 8850 c/w ML 8770	Fluorescence	0.5 ppm SO <sub>2</sub> 0.5 ppm TRS
NO <sub>x</sub> , NO <sub>2</sub> , NO analyzer	Monitor Labs 8840	Chemi-Luminescence	1.0 ppm NO <sub>x</sub> (as NO <sub>2</sub> )
CO analyzer	Thermo Electron P48	Gas Filter Correlation	100 ppm CO (digital)
O <sub>3</sub> analyzer/source	Dasibi 1003-AAS	UV Absorption	1.0 ppm O <sub>3</sub> (digital)
CO & THC sources	Matheson	Compressed Gas	N/A
Gas Chromatograph	HP 5880 Dual Capillary Column	Flame Ionization Det.	as set per calibrations

## Meteorological Instrumentation

Instrument	Manufacturer	Scale
** Wind speed	Lambrecht GmbH	km/hr
** Wind direction	Lambrecht GmbH	degrees
Temperature	Weather Measure (WM) T621	degrees Celsius
Humidity	WM-HM-11P	absolute & %
Barometric pressure	WM-BM70-B242	millibars
Solar Radiation	WM Star Pyranometer	milliwatts/cm <sup>2</sup>

\*\* These instruments are located on top of a 10 metre retractable tower

TABLE #2

## THE INSTRUMENTATION OF MOBILE AIR MONITORING UNIT #2

Instrument	Manufacturer	Analytical Technique	Full Scale Sensitivity
THC, CH <sub>4</sub> , TH-M analyzer	Ingenieur- Produktions-Gruppe Munchen (IPM) RS-t	Dual flame ionization	50 ppm THC (as CH <sub>4</sub> )
H <sub>2</sub> S, SO <sub>2</sub> , NO <sub>x</sub> sources	Hartmann & Braun Prufgasgenerator	N/A	N/A
TRS analyzer	Monitor Labs 8850 c/w ML 8770	Fluorescence	0.5 ppm H <sub>2</sub> S
SO <sub>2</sub> analyzer	Monitor Labs 8850	Fluorescence	0.5 ppm SO <sub>2</sub>
NO <sub>x</sub> , NO <sub>2</sub> , NO analyzer	Monitor Labs 8840	Chemi- Luminescence	1.0 ppm NO <sub>x</sub> (as NO <sub>2</sub> )
CO analyzer	Thermo Electron P48	Gas Filter Correlation	100 ppm CO (digital)
O <sub>3</sub> analyzer/ source	Dasibi 1003-AAS	UV Absorption	1.0 ppm O <sub>3</sub> (digital)
CO & THC sources	Matheson	Compressed Gas	N/A
Gas Chromatograph	HP 5880 Dual Capillary Column	Flame Ion- ization Det.	as set per calibrations

## Meteorological Instrumentation

Instrument	Manufacturer	Scale
** Wind speed	Lambrecht GmbH	km/hr
** Wind direction	Lambrecht GmbH	degrees
Temperature	Weather Measure (WM) T621	degrees Celsius
Humidity	WM-HM-11P	absolute & %
Barometric pressure	WM-BM70-B242	millibars
Solar Radiation	WM Star Pyranometer	milliwatts/cm <sup>2</sup>

\*\* These instruments are located on top of a 10 metre retractable tower

Table #3

## Etobicoke '87 Air Quality Survey

Monitoring Periods and Site Information - MAMu#1 and #2

Monitoring Period *	Start Monitoring (hr/dd/mm)	Duration (hrs)	End Monitoring (hr/dd/mm)	Site ** Location	Comments
A112	13:14/11/05	1.1	14:20/11/05	Jellicoe	Instrumentation Check
B112	13:56/11/05	18.8	08:50/12/05	C.K.School	Longterm Monitoring
A113	14:33/11/05	93.5	12:03/15/05	Jellicoe	Longterm Monitoring
B122	09:22/12/05	2.8	12:10/12/05	C.K.School	Morning Monitoring
B123	12:12/12/05	1.8	14:00/12/05	C.K.School	Instrumentation Check
B124	13:59/12/05	69.1	11:05/15/05	C.K.School	Longterm Monitoring
B153	11:42/15/05	92.6	08:18/19/05	C.K.School	Longterm Monitoring
A152	12:33/15/05	93.8	10:21/19/05	Jellicoe	Longterm Monitoring
B192	10:53/19/05	3.2	14:05/19/05	C.K.School	Downwind L.G. & Castrol
A191	11:32/19/05	21.9	09:26/20/05	Jellicoe	Longterm Monitoring
B193	14:28/19/05	1.2	15:40/19/05	C.K.School	Downwind L.G. & Castrol
B194	15:41/19/05	17.5	09:11/20/05	C.K.School	Overnight Monitoring
B202	09:41/20/05	7.1	16:47/20/05	C.K.School	Daytime Monitoring
A202	09:59/20/05	4.1	14:05/20/05	Jellicoe	Morning Monitoring
A203	14:41/20/05	2.2	16:53/20/05	32nd & Elder	Upwind L.G. & Castrol
B203	16:47/20/05	16.4	09:11/21/05	C.K.School	Overnight Monitoring
A204	17:34/20/05	15.6	09:10/21/05	Jellicoe	Overnight Monitoring
A212	09:45/21/05	23.5	09:15/22/05	Jellicoe	Longterm Monitoring
B212	10:46/21/05	0.7	10:28/21/05	C.K.School	Instrumentation Check
B213	12:37/21/05	2.8	15:25/21/05	C.K.School	Afternoon Monitoring
B214	15:30/21/05	8.5	00:00/22/05	C.K.School	Overnight Monitoring
A222	09:53/22/05	72.2	10:05/25/05	Jellicoe	Longterm Monitoring
B222	10:09/22/05	4.5	14:39/22/05	C.K.School	Instrumentation Check
B223	14:36/22/05	67.0	09:36/25/05	C.K.School	Longterm Monitoring
B252	10:01/25/05	5.2	15:13/25/05	C.K.School	Daytime Monitoring
A252	10:57/25/05	28.1	15:03/26/05	Jellicoe	Longterm Monitoring
B253	15:34/25/05	42.5	10:04/27/05	C.K.School	Longterm Monitoring
A261	15:27/26/05	21.5	12:57/27/05	Jellicoe	Longterm Monitoring
B272	12:48/27/05	3.0	15:48/27/05	C.K.School	Daytime Monitoring
A271	14:01/27/05	1.0	15:01/27/05	Chry.Pkg.Lot	Downwind PPG
A272	16:04/27/05	1.3	17:24/27/05	Jellicoe	Power Loss @ Van
B274	16:23/27/05	21.5	13:53/28/05	C.K.School	Overnight Monitoring

Table #3 cont.

Monitoring Period *	Start Monitoring (hr/dd/mm)	Duration (hrs)	End Monitoring (hr/dd/mm)	Site ** Location	Comments
A281	10:08/28/05	3.7	13:50/28/05	Jellicoe	Instrumentation Check
A282	14:11/28/05	20.8	10:59/29/05	Jellicoe	Longterm Monitoring
B281	14:18/28/05	1.2	15:30/28/05	Chry.Pkg.Lot	Downwind PPG
B282	16:03/28/05	16.9	20:57/29/05	C.K.School	Overnight Monitoring
B293	09:31/29/05	1.7	11:13/29/05	C.K.School	Last Monitoring Episode

Thirty-seven monitoring periods comprised this survey and 434 hours of common contaminant data were acquired.

\* In the designation of Monitoring Periods: 'A' refers to Mobile Air Monitoring Unit #1 (MAMu#1); 'B' refers to MAMu#2; the next two digits, the day of the month; and the final digit, the data acquisition episode of the day.

\*\* Jellicoe refers to Jellicoe Avenue; a semi-permanent monitoring site, just west of Gort Avenue. (MAMu#1)  
C.K.School refers to Christ the King Catholic School; the second semi-permanent monitoring site at the corner of Brown's Line and Lakeshore Boulevard. (MAMu#2)  
32nd & Elder refers to 32nd Street and Elder Avenue.  
Chry.Pkg.Lot refers to the Chrysler Parking lot just north of PPG Canada Limited.

Table #4

## Etobicoke '87 Air Quality Survey

Common Contaminant Data  
Overall Average Ground Level Concentrations (ppm)

Monitoring Period	Start Time	Duration (hrs)	NO2	TH-M	CO	SO2	O3	Average Wind
A112	13:14	1.1	0.01	0.99	0.77	n.d.	0.07	2511
B112	13:56	18.8	0.03	n.a.	0.50	n.d.	0.04	2407
A113	14:33	93.5	0.02	0.30	0.66	0.01	0.03	****
B122	9:22	2.8	0.02	n.a.	0.02	n.d.	0.02	0002
B123	12:12	1.8	0.02	n.a.	0.19	n.d.	0.03	3304
B124	13:59	69.1	0.03	n.a.	0.42	0.01	0.03	****
B153	11:42	92.6	0.03	n.a.	0.42	n.d.	0.01	****
A152	12:33	93.8	0.02	0.67	0.52	n.d.	0.03	****
B192	10:53	3.2	0.02	n.a.	0.31	n.d.	0.03	0605
A191	11:32	21.9	0.01	0.45	0.58	n.d.	0.02	0915
B193	14:28	1.2	0.02	n.a.	0.30	n.d.	0.04	0706
B194	15:41	17.5	0.02	n.a.	0.36	n.d.	0.02	1003
B202	9:41	7.1	0.04	n.a.	0.81	n.d.	0.02	1002
A202	9:59	4.1	0.03	1.24	0.90	n.d.	0.01	0907
A203	14:41	2.2	0.03	1.06	1.85	n.d.	0.02	0915
B203	16:47	16.4	0.02	n.a.	0.49	n.d.	0.03	1101
A204	17:34	15.6	0.02	0.74	0.70	n.d.	0.02	****
A212	9:45	23.5	0.03	0.98	0.60	n.d.	0.02	****
B212	10:46	0.7	0.02	n.a.	0.48	n.d.	n.a.	1103
B213	12:37	2.8	0.02	n.a.	0.61	n.d.	0.03	1103
B214	15:30	8.5	0.03	n.a.	0.73	n.d.	0.04	1202
A222	9:53	72.2	0.02	0.75	0.66	n.d.	0.02	****
B222	10:09	4.5	0.04	n.a.	1.16	0.01	0.02	1602
B223	14:36	67.0	0.03	n.a.	0.59	n.d.	0.02	****
B252	10:01	5.2	0.01	n.a.	0.37	0.01	0.04	1107
A252	10:57	28.1	0.03	0.14	0.71	n.d.	0.02	0904
B253	15:34	42.5	0.03	n.a.	0.87	n.d.	0.02	****
A261	15:27	21.5	0.03	1.27	1.08	n.d.	0.02	Calm

Table 4 cont.

Monitoring Period	Start Time	Duration (hrs)	NO2	TH-M	CO	SO2	O3	Average Wind
B272	12:48	3.0	0.02	n.a.	0.59	0.01	0.06	1104
A271	14:01	1.0	0.03	0.94	0.67	n.d.	0.04	0806
A272	16:04	1.3	0.04	0.97	1.04	n.d.	0.04	n.a.
B274	16:23	21.5	0.06	n.a.	1.56	0.01	0.03	****
A281	10:08	3.7	0.04	0.79	1.73	0.01	0.04	1501
A282	14:11	20.8	0.04	0.29	1.07	n.d.	0.04	2602
B281	14:18	1.2	0.05	n.a.	1.76	0.01	0.04	1904
B282	16:03	16.9	0.06	n.a.	1.15	0.01	0.03	****
B293	9:31	1.7	0.02	n.a.	0.36	n.d.	0.05	2910

\*\* n.d. - not detected; overall average ambient air concentrations less than minimal detection limit of analyzer. For SO2, this is less than 0.01 ppm (parts per million).  
 n.a. - not available; analyzer was inoperative.  
 \*\*\*\* - available, but not computed: Wind directional statement demands vector analysis.

Table #5

## Etobicoke '87 Air Quality Survey

Common Contaminant Data  
Maximum One-Hour Average Ground Level Concentrations (ppm)

Monitoring Period	Start Time	Duration (hrs)	NO2	THC	TH-M	CO	SO2	O3
A112	13:14	1.1	0.01	1.84	1.00	0.81	n.d.	0.07
B112	13:56	18.8	0.06	1.33	n.a.	1.20	n.d.	0.09
A113	14:33	93.5	0.05	2.47	1.05	2.26	0.02	0.08
B122	9:22	2.8	0.02	1.19	n.a.	0.22	n.d.	0.03
B123	12:12	1.8	0.02	1.02	n.a.	0.20	n.d.	0.03
B124	13:59	69.1	0.06	1.96	n.a.	2.07	0.03	0.05
B153	11:42	92.6	0.11	1.83	n.a.	1.03	n.d.	0.04
A152	12:33	93.8	0.07	2.72	2.11	1.23	n.d.	0.09
B192	10:53	3.2	0.02	n.a.	n.a.	0.37	n.d.	0.03
A191	11:32	21.9	0.02	1.92	0.96	1.27	n.d.	0.04
B193	14:28	1.2	0.02	n.a.	n.a.	0.32	n.d.	0.04
B194	15:41	17.5	0.03	1.27	n.a.	1.04	n.d.	0.03
B202	9:41	7.1	0.05	1.78	n.a.	1.10	n.d.	0.03
A202	9:59	4.1	0.04	2.71	1.68	0.95	n.d.	0.01
A203	14:41	2.2	0.04	2.06	1.07	2.05	n.d.	0.02
B203	16:47	16.4	0.06	1.35	n.a.	1.01	n.d.	0.04
A204	17:34	15.6	0.05	2.29	1.34	1.23	n.d.	0.04
A212	9:45	23.5	0.06	2.52	1.44	1.11	n.d.	0.04
B212	10:46	0.7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
B213	12:37	2.8	0.02	n.a.	n.a.	0.67	n.d.	0.04
B214	15:30	8.5	0.05	n.a.	n.a.	1.01	n.d.	0.05
A222	9:53	72.2	0.06	3.37	2.04	1.65	n.d.	0.05
B222	10:09	4.5	0.06	n.a.	n.a.	1.91	0.01	0.03
B223	14:36	67.0	0.08	n.a.	n.a.	1.46	n.d.	0.06
B252	10:01	5.2	0.01	n.a.	n.a.	0.47	0.01	0.05
A252	10:57	28.1	0.05	1.93	0.85	1.68	n.d.	0.04
B253	15:34	42.5	0.07	n.a.	n.a.	2.11	n.d.	0.05
A261	15:27	21.5	0.07	3.15	1.78	2.11	n.d.	0.04



Table 5 cont.

Monitoring Period	Start Time	Duration (hrs)	NO2	THC	TH-M	CO	SO2	O3
B272	12:48	3.0	0.02	n.a.	n.a.	0.64	0.01	0.07
A271	14:01	1.0	0.03	1.81	0.94	0.67	n.d.	0.04
A272	16:04	1.3	0.04	1.94	1.00	1.08	n.d.	0.04
B274	16:23	21.5	0.10	n.a.	n.a.	3.99	0.02	0.07
A281	10:08	3.7	0.05	1.99	0.94	2.04	0.01	0.06
A282	14:11	20.8	0.09	2.05	0.86	2.25	n.d.	0.07
B281	14:18	1.2	0.05	n.a.	n.a.	1.70	0.01	0.04
B282	16:03	16.9	0.11	n.a.	n.a.	3.13	0.02	0.07
B293	9:31	1.7	0.03	n.a.	n.a.	0.40	n.d.	0.06

\*\* n.d. - not detected; overall average ambient air concentrations less than minimal detection limit of analyzer. For SO2, this is less than 0.01 ppm (parts per million).  
 n.a. - not available; analyzer was inoperative.  
 \*\*\*\* - available, but not computed: Wind directional statement demands vector analysis.

TABLE #6  
EVAN'S AVENUE  
AIR QUALITY DATA  
GROUND LEVEL CONCENTRATIONS

DAILY AVERAGES					MAXIMUM ONE-HOUR AVERAGES			
Date	SO2	CO	THC	NO2	SO2	CO	THC	NO2
May 11	n.d.	1.0	1.8	0.06	0.01	4.0	3.2	0.09
May 12	n.d.	n.d.	1.5	0.05	0.02	1.0	1.8	0.06
May 13	n.d.	n.d.	1.7	0.06	0.01	2.0	2.3	0.07
May 14	****	****	****	****	0.02	1.0	1.9	0.08
May 15	****	****	****	****	n.d.	1.0	1.6	0.06
May 16	n.d.	1.0	1.6	0.05	0.01	1.0	1.9	0.06
May 17	n.d.	1.0	1.8	0.07	0.01	1.0	2.3	0.12
May 18	n.d.	1.0	1.6	0.05	n.d.	1.0	1.7	0.06
May 19	n.d.	1.0	1.6	0.05	n.d.	1.0	1.7	0.07
May 20	n.d.	1.0	1.8	0.04	0.01	1.0	2.0	0.06
May 21	n.d.	1.0	1.9	0.04	0.01	3.0	3.4	0.08
May 22	n.d.	1.0	2.1	0.05	0.02	3.0	3.0	0.09
May 23	n.d.	1.0	1.7	0.03	n.d.	1.0	2.6	0.06
May 24	n.d.	1.0	1.3	0.03	0.01	1.0	1.4	0.05
May 25	n.d.	1.0	1.4	0.03	0.01	2.0	2.0	0.04
May 26	n.d.	2.0	1.8	0.05	0.01	4.0	2.9	0.08
May 27	0.01	2.0	1.8	0.05	0.01	5.0	2.7	0.07
May 28	0.01	2.0	2.2	0.04	0.02	4.0	3.6	0.07
May 29	0.01	1.0	1.6	0.03	0.01	3.0	1.9	0.06
May 30	0.01	1.0	2.0	0.02	0.01	1.0	2.8	0.05

NOTE: All units in parts per million (ppm).

\*\*\*\* - Indicates not enough valid data available to calculate daily averages.

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Table 7

Characteristics of the Organics Measured by the Gas Chromatographic Systems of MAMu's 1 and 2

All concentrations are in terms of  $\mu\text{g}/\text{m}^3$  (micrograms per cubic metre)

	Detection Limits	Standards, Guidelines or		TWA	STEL	Alternate Names
		Prov.Guidelines	Criterion			
2 PROPADIENE	0.3					ALLENE
3 PROPYNE	0.3					METHYL ACETYLENE
4 CHLOROMETHANE	0.3	20000 (2)	7000 (A)	105000	205000	METHYL CHLORIDE
5 CYCLOPROPANE	0.3					
6 2-METHYLPROPANE	0.3					ISOBUTANE
7 CHLOROETHENE	0.3	560 (2)	280 (A)	5000	10000	VINYL CHLORIDE; CHLOROETHYLENE
8 2-CHLORO-2-METHYLPROPANE	0.3					
9 1-BUTENE	0.3					
10 1,3-BUTADIENE	0.3					
11 BUTANE	0.2			1900000		*n-BUTANE*
12 1-BUTYNE	0.3					ETHYLACETYLENE
13 CHLOROETHANE	0.3			2600000	3250000	ETHYL CHLORIDE
14 3-METHYL-1-BUTENE	0.3					ISOAMYLENE
15 2-METHYLBUTANE	0.3					ISOPENTANE
16 2-METHYL-1-BUTENE	0.3					
17 PENTANE	0.2			1800000	2250000	*N-PENTANE*
18 2-METHYL-1,3-BUTADIENE	0.4					ISOPRENE
19 trans-2-PENTENE	0.2					
20 cis-2-PENTENE	0.2					
21 DICHLOROMETHANE	1.5	100000 (1)	100000 (B)	350000	1740000	METHYLENE CHLORIDE
22 2-METHYL-2-BUTENE	0.3					
23 2,2-DIMETHYLBUTANE	0.2					NEOHEXANE
24 trans-1,2-DICHLOROETHENE	0.3					
25 3-METHYL-1-PENTENE	0.2					
26 4-METHYL-1-PENTENE	0.2					
27 CYCLOPENTANE	0.2					
28 2,3-DIMETHYLBUTANE	0.2					
29 2-METHYLPENTANE	0.2					
30 3-METHYLPENTANE	0.2					
31 1-HEXENE	0.3					
32 cis-1,2-DICHLOROETHENE	0.3			790000	1000000	cis-1,2-DICHLOROETHYLENE; SYM-DICHLOROETHYLENE
33 2-CHLOROBUTANE	0.6					sec-BUTYL CHLORIDE

Table 7

Characteristics of the Organics Measured by the Gas Chromatographic Systems of MAMu's 1 and 2

All concentrations are in terms of  $\mu\text{g}/\text{m}^3$  (micrograms per cubic metre)

	Detection Limits	Standards, Guidelines or		TWA	STEL	Alternate Names
		Prov.Guidelines	Criterion			
34 1-CHLORO-2-METHYLPROPANE	0.4					
35 HEXANE	0.3	35000 (2)		180000		*n-HEXANE*
36 CHLOROFORM	2.2	1500 (2)	500 (A)	50000	225000	TRICHLOROMETHANE
37 trans-3-HEXENE	0.3					
38 3-CHLORO-2-METHYLPROPENE	0.3					ISOBUTENYL CHLORIDE
39 METHYLCYCLOPENTANE	0.2					
40 2,4-DIMETHYLPENTANE	0.2					
41 1,2-DICHLOROETHANE	0.2			40000	60000	ETHYLENE CHLORIDE
42 2,2-DIMETHYLPENTANE	0.4					
43 2,2,3-TRIMETHYLBUTANE	0.2					
44 1,1,1-TRICHLOROETHANE	1.0	350000 (1)	115000 (A)	19000000	2450000	METHYL CHLOROFORM
45 1-CHLOROBUTANE	0.4					n-BUTYL CHLORIDE
46 BENZENE	0.2	10000 (1)	3300 (A)	30000	75000	
47 TETRACHLOROMETHANE	0.9	1800 (2)	600 (A)	20000	125000	CARBON TETRACHLORIDE
48 3,3-DIMETHYLPENTANE	0.2					
49 CYCLOHEXANE	0.2	300000 (2)	100000 (A)	1050000	1300000	HEXAHYDROBENZENE
50 2,3-DIMETHYLPENTANE	0.3					
51 2-METHYLHEXANE	0.5					ISOHEPTANE
52 CYCLOHEXENE	0.3			1015000		
53 DIBROMOMETHANE	18.4					METHYLENE DIBROMIDE; METHYLENE BROMIDE
54 1,2-DICHLOROPROPANE	0.6					PROPYLENE CHLORIDE
55 3-METHYLHEXANE	0.5					
56 2,3-DICHLOROPROPENE	0.7			5000	50000	2,3-DICHLOROPROPYLENE
57 TRICHLOROETHENE	0.3	85000 (1)	28000 (A)	270000	1080000	TRICHLOROETHYLENE
58 2,2,4-TRIMETHYLPENTANE	0.2					ISOOCTANE
59 1-HEPTENE	0.3					
60 HEPTANE	0.2			1600000	2000000	*n-HEPTANE*
61 trans-2-HEPTENE	0.3					
62 METHYLCYCLOHEXANE	0.2			1600000	2000000	HEXAHYDROTOLUENE
63 2,2-DIMETHYLHEXANE	0.2					
64 ETHYLCYCLOPENTANE	0.2					
65 4-METHYLCYCLOHEXENE	0.3					

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Table 7

Characteristics of the Organics Measured by the Gas Chromatographic Systems of MAMu's 1 and 2

All concentrations are in terms of ug/m<sup>3</sup> (micrograms per cubic metre)

	Detection Limits	Standards, Guidelines or		TWA	STEL	Alternate Names
		Prov.Guidelines	Criterion			
66 2,5-DIMETHYLHEXANE	0.5					
67 1-CHLOROPENTANE	0.4					n-AMYL CHLORIDE; PENTYL CHLORIDE
68 1,1,2-TRICHLOROETHANE	1.1					VINYL TRICHLORIDE
69 2,3,4-TRIMETHYLPENTANE	0.2					
70 TOLUENE	0.2	2000 (1)	2000 (A)	375000	560000	*METHYLBENZENE*; PHENYLMETHANE
71 1,3-DICHLOROPROPANE	0.7			350000	510000	TRIMETHYLENE CHLORIDE
72 2-METHYLHEPTANE	0.2					
73 4-METHYLHEPTANE	0.2					
74 c-1,3-DIMETHYLCYCLOHEXANE	0.2					
75 3-METHYLHEPTANE	0.2					
76 1,2-DIBROMOETHANE	2.1					ETHYLENE DIBROMIDE; ETHYLENE BROMIDE
77 1,1-DIMETHYLCYCLOHEXANE	0.3					
78 1-OCTENE	0.4	150000 (3)	50000 (A)			
79 trans-1,2-DIMETHYLCYCLOHEXANE	0.3					*trans-1,2-DIMETHYLCYCLOHEXANE
80 trans-4-OCTENE	0.3					
81 TETRACHLOROETHENE	0.9			335000	1340000	TETRACHLOROETHYLENE; PERCHLOROETHYLENE
82 c-1,4-DIMETHYLCYCLOHEXANE	0.3					
83 OCTANE	0.3			1450000	1800000	*n-OCTANE*
84 trans-2-OCTENE	0.6					
85 cis-1,2-DIMETHYLCYCLOHEXANE	0.2					
86 CHLOROBENZENE	0.4			350000		PHENYL CHLORIDE
87 ETHYLCYCLOHEXANE	0.1					
88 1-CHLOROHEXANE	0.5					n-HEXYL CHLORIDE
89 ETHYLBENZENE	0.3	4000 (1)	4000 (B)	435000	545000	
90 m-XYLENE	0.3	2300 (4)	2300 (A)	435000	655000	*1,3-DIMETHYLBENZENE*
91 p-XYLENE	0.3	2300 (4)	2300 (A)	435000	655000	*1,4-DIMETHYLBENZENE*
92 4-METHYLOCTANE	0.3					
93 2-METHYLOCTANE	0.3					
94 3-METHYLOCTANE	0.3					
95 STYRENE	0.5	400 (1)	400 (A)	215000	425000	*ETHENYLBENZENE*; PHENYLETHYLENE; VINYLBENZENE
96 1,4-DICHLOROBUTANE	0.3					
97 o-XYLENE	0.3	2300 (4)	2300 (A)	435000	655000	*1,2-DIMETHYLBENZENE*

Table 7

Characteristics of the Organics Measured by the Gas Chromatographic Systems of MAMu's 1 and 2

All concentrations are in terms of ug/m<sup>3</sup> (micrograms per cubic metre)

	Detection Limits	Standards, Guidelines or		TWA	STEL	Alternate Names
		Prov.Guidelines	Criterion			
98 1,1,2,2-TETRACHLOROETHANE	2.6					ACETYLENE TETRACHLORIDE
99 1,2,3-TRICHLOROPROPANE	1.3			300000	450000	TRICHLOROHYDRIN
100 1-NONENE	0.7					
101 trans-1,4-DICL-2-BUTENE	0.9					
102 NONANE	0.3			1050000	1300000	*n-NONANE*
103 ISOPROPYLBENZENE	0.3	100 (3)	100 (B)			*(1-METHYLETHYL)BENZENE*; CUMENE
104 2-CHLOROTOLUENE	0.3					*2-CHLORO-1-METHYLBENZENE*; o-TOLYL CHLORIDE; o-CHLOROTO
105 3-CHLOROTOLUENE	0.5					*3-CHLORO-1-METHYLBENZENE*; m-TOLYL CHLORIDE; m-CHLOROTO
106 4-CHLOROTOLUENE	0.5					*4-CHLORO-1-METHYLBENZENE; p-TOLYL CHLORIDE; p-CHLOROTOL
107 PROPYLBENZENE	0.4					n-PROPYLBENZENE
108 3-ETHYLTOLUENE	0.3					*1-ETHYL-3-METHYLBENZENE*; M-ETHYLTOLUENE
109 4-ETHYLTOLUENE	0.3					*1-ETHYL-4-METHYLBENZENE*; P-ETHYLTOLUENE
110 1,3,5-TRIMETHYLBENZENE	0.4			125000	170000	ME\$ITYLENE
111 2-ETHYLTOLUENE	0.3					*1-ETHYL-2-METHYLBENZENE*; O-ETHYLTOLUENE
112 1,2,4-TRIMETHYLBENZENE	0.4	100 (1)	1000 (A)	125000	170000	PSUEDOCUMENE
113 tert.BUTYLBENZENE	0.3					*(1,1-DIMETHYLETHYL)BENZENE*
114 tert.BUTYLCYCLOHEXANE	0.4					
115 1,3-DICHLOROBENZENE	0.8					
116 1-DECENE	1.3	180000 (3)	60000 (A)			n-DECYLENE
117 (CHLOROMETHYL)BENZENE	4.3					alpha-CHLOROTOLUENE; BENZYL CHLORIDE
118 1,5-DICHLOROPENTANE	0.3					
119 isoBUTYLBENZENE	0.3					
120 DECANE	0.5					*n-DECANE*
121 sec.BUTYLBENZENE	0.2					*(1-METHYLPROPYL)BENZENE*
122 3-(CHLOROMETHYL)HEPTANE	0.3					
123 1,2,3-TRIMETHYLBENZENE	0.4			125000	175000	HEMIMELLITENE
124 1ISOPROPYL4METHYLBENZENE	0.5					*METHYL(4-METHYLETHYL)BENZENE*; 3-ISOPROPYLTOLUENE; P-CY
125 1,2-DICHLOROBENZENE	0.3					o-DICHLOROBENZENE
126 INDAN	0.5					*2,3-DIHYDRO-1H-INDENE*; 2,3-DIHYDROINDENE; HYDRINDENE
127 BUTYLCYCLOHEXANE	0.4					n-BUTYLCYCLOHEXANE; 1-CYCLOHEXYLBUTANE
128 1,3-DIETHYLBENZENE	0.4					m-DIETHYLBENZENE
129 1,4-DIETHYLBENZENE	0.5					p-DIETHYLBENZENE

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Table 7

Characteristics of the Organics Measured by the Gas Chromatographic Systems of MAMu's 1 and 2

All concentrations are in terms of ug/m<sup>3</sup> (micrograms per cubic metre)

	Detection Limits	Standards, Guidelines or			TWA	STEL	Alternate Names
		Prov.Guidelines	Criterion				
130 BUTYLBENZENE	0.3						n-BUTYLBENZENE
131 1,2-DIETHYLBENZENE	0.5						o-DIETHYLBENZENE
132 transDECAHYDRONAPHTHALENE	0.3						t-DECALIN; BICYCLO[4,4,0]DECANE
133 cis-DECAHYDRONAPHTHALENE	0.3						c-DECALIN; BICYCLO[4,4,0]DECANE
134 UNDECANE	0.8						*n-UNDECANE*; HENDECANE
135 1235-TETRAMETHYLBENZENE	0.6						ISODURENE
136 1234-TETRAMETHYLBENZENE	0.6						PREHNITENE
137 1,3-DIISOPROPYLBENZENE	0.8						*1,3-BIS(1-METHYLETHYL)BENZENE*
138 1234TETRAHYDRONAPHTHALENE	0.6						TETRALIN
139 1,4-DIISOPROPYLBENZENE	0.8						*1,4-BIS(1-METHYLETHYL)BENZENE*; ISOPROPYLCUMENE
140 NAPHTHALENE	0.8	36 (3)	22.5 (A)				
141 DODECANE	1.3						*n-DODECANE*

NOTES: (1) Standard  
 (2) Guideline  
 (3) Provisional Guideline  
 (4) Provisional Guideline for sum of o-, m-, & p-Xylenes

(A) Ambient Air Quality Criterion based on a 24-hour average concentration  
 (B) Ambient Air Quality Criterion based on a 1-hour average concentration  
 (please note; if the maximum 1-hour average concentration of a contaminant is LESS than the Criterion concentration based on a 24-hour average, then that Criterion has NOT been exceeded.)

TWA - Time Weighted Average for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed without adverse effect.

STEL - Short Term Exposure Limit - concentration to which workers can be exposed for a short period of time (15 minutes) without adverse effect.

\* - Denotes name approved by the International Union of Pure and Applied Chemistry (IUPAC).

## Characteristics of the Common Contaminants as Measured Continuously by MAMU's #1 and #2

All concentrations are in terms of ppm (parts per million)

	Detection Limits	Standards, Guidelines or Prov.Guidelines (1/2-hr)	Criterion (1-hr)	TWA	STEL	Alternate Names
1 SULPHUR DIOXIDE	0.005	0.300	0.25	2	5	SO2 SULFUR DIOXIDE
2 TOTAL REDUCED SULPHUR	0.005	0.027 *	0.027	10	15 **	TRS
3 NITROGEN OXIDES	0.01	0.25 ***	N/A	-	-	NOx OXIDES of NITROGEN
4 NITROGEN DIOXIDE	0.01	N/A	0.20	5	5	NO2
5 NITRIC OXIDE	0.01	N/A	N/A	25	35	NO NITROGEN MONOXIDE
6 OZONE	0.01	0.1	0.08	0.1	0.3	O3
7 CARBON MONOXIDE	0.1	5.0	30.0	50	400	CO

\* As equivalent H2S and applicable only for Kraft Pulp Mills

TRS may contain any of the following: Hydrogen Sulphide (H2S), Methyl Mercaptan (CH3SH), Dimethyl Sulphide (C2H6S) and Dimethyl Disulphide (C2H6S2) and others.

\*\* The TWA and STEL for TRS as expressed solely as Hydrogen Sulphide concentrations

\*\*\* Expressed as NO2



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Table 8

Etobicoke '87 Air Quality Survey  
First Week ... 72 Hours of Continuous Monitoring

NAMu#1 at the Jellicoe Site; discrete 8-hour samples      NAMu#2 at Christ the King Catholic School site; discrete 1-hour samples

Sampling Date Sampling Times	Start End	MAY 12 12:00 20:00	MAY 12 12:00 20:00	MAY 13 11:00 19:00	MAY 13 11:00 19:00	MAY 13 19:00 03:00	MAY 13 03:00 11:00	MAY 14 03:00 11:00	MAY 14 11:00 19:00	MAY 14 19:00 03:00	MAY 14 03:00 11:00	MAY 14 11:00 19:00	MAY 14 19:00 03:00	MAY 15 03:00 11:00	MAY 15 11:00 19:00	Average for NAMu#1	Maximum for NAMu#1	Average for NAMu#2	Maximum for NAMu#2
NAMU Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2				
1 PROPANE		3.4	4.5	3.0	4.9	3.8	4.4	3.6	3.9	3.3	7.2	0.9	9.5	3.2	4.6	3.0	3.8	5.6	9.5
2 PROPADIENE																			
3 PROPYNE																			
4 CYCLOPROPANE																			
5 CHLOROMETHANE																			
6 2-METHYLPROPANE		1.6	2.2	1.4	2.7	1.8	1.8	1.8	2.4	2.0	3.8		4.5		1.6	1.7	2.0	2.7	4.5
7 CHLOROETHENE																			
8 1-BUTENE			0.2		0.3				0.2	0.3	0.2			0.2	0.3	0.2	0.3	0.2	0.3
9 1,3-BUTADIENE		0.4		0.3		0.6										0.4	0.6		
10 BUTANE		3.6	4.3	2.5	6.7	5.0	5.4	5.4	6.8	5.7	11.5	1.0	14.9		4.4	3.9	5.7	7.7	14.9
11 1-BUTYNE																			
12 CHLOROETHANE																			
13 3-METHYL-1-BUTENE																			
14 2-METHYLBUTANE		2.7	3.9	3.1	5.2	4.3	4.7	4.2	5.9	3.4	7.9	4.5	11.0		2.8	3.7	4.5	5.9	11.0
15 2-METHYL-1-BUTENE					0.2		0.2		0.2		0.7		1.1		0.1			0.4	1.1
16 PENTANE		2.1	2.7	2.0	3.1	2.9	3.1	3.2	3.9	2.6	5.1	3.1	7.6	0.1	1.8	2.3	3.2	3.9	7.6
17 2-METHYL-1,3-BUTADIENE											0.2		0.3					0.2	0.3
18 trans-2-PENTENE			0.4		0.6		0.6	0.5	0.7		0.8		0.9		0.1	0.5	0.5	0.6	0.9
19 cis-2-PENTENE					0.1		0.1		0.1		0.2		0.4					0.2	0.4
20 DICHLOROMETHANE			1.0		2.3				1.4		2.9		4.0	0.7	0.3	0.7	0.7	2.0	4.0
21 2-METHYL-2-BUTENE			0.3		0.4		0.5		0.6		0.9		0.9	0.1	0.1	0.1	0.1	0.5	0.9

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Etobicoke '87 Air Quality Survey  
First Week ... 72 Hours of Continuous Monitoring

MAMu#1 at the Jellicoe Site; discrete 8-hour samples

MAMu#2 at Christ the King Catholic School site; discrete 1-hour samples

Sampling Date	Start	MAY 12	MAY 12	MAY 13	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	Average	Maximum	Average	Maximum
Sampling Times	End	12:00	12:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	for	for	for	for
MAMu Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2	MAMu#1	MAMu#1	MAMu#2	MAMu#2
22 2,2-DIMETHYLBUTANE					0.1		0.1		0.1	0.5	0.4		0.5			0.5	0.5	0.2	0.5
23 2-CHLORO-2-METHYLPROPANE																			
24 trans-1,2-DICHLOROETHENE																			
25 3-METHYL-1-PENTENE																			
26 4-METHYL-1-PENTENE																			
27 CYCLOPENTANE			0.3		0.3		0.3		0.5	0.2	0.8		0.9		0.1	0.2	0.2	0.4	0.9
28 2,3-DIMETHYLBUTANE			0.3		0.4	0.7	0.5	0.6	0.6	0.4	0.8		1.0		0.0	0.6	0.7	0.5	1.0
29 2-METHYLPENTANE		1.2	1.8	1.9	2.1	3.0	2.7	2.4	2.7	2.1	3.4	1.9	4.8	0.9	1.1	1.9	3.0	2.7	4.8
30 3-METHYLPENTANE		0.7	1.1	1.4	1.2	2.4	1.9	1.5	1.6	1.5	1.9	1.2	2.9	0.6	0.6	1.3	2.4	1.6	2.9
31 1-HEXENE						0.1		0.1		0.2		0.1				0.1	0.2		
32 cis-1,2-DICHLOROETHENE																			
33 2-CHLOROBUTANE																			
34 HEXANE		1.9	1.5	11.6	1.6	4.9	3.2	3.2	2.2	17.2	2.8	3.0	4.8	2.4	0.9	6.3	17.2	2.4	4.8
35 1-CHLORO-2-METHYLPROPANE																			
36 TRICHLOROMETHANE																			
37 trans-3-HEXENE																			
38 3-CHLORO-2-METHYLPROPANE						0.1		0.4								0.2	0.4		
39 METHYLCYCLOPENTANE		0.5	0.6	1.1	0.7	0.9	0.9	0.8	0.9	1.8	1.1	0.7	1.8	0.4	0.3	0.9	1.8	0.9	1.8
40 2,2-DIMETHYLPENTANE				0.1		0.2	0.1	0.1								0.1	0.2	0.1	0.1
41 1,2-DICHLOROETHANE																			
42 2,4-DIMETHYLPENTANE						0.2	0.1		0.2		0.3		0.5			0.2	0.2	0.3	0.5
43 1,1,1-TRICHLOROETHANE		2.1	2.5	1.9	2.4	1.3	1.5	0.7	1.2	1.7	1.9	1.7	3.5	0.4	2.4	1.4	2.1	2.2	3.5
44 2,2,3-TRIMETHYLBUTANE																			
45 1-CHLOROBUTANE																			

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Table 8 cont.

Etobicoke '87 Air Quality Survey  
First Week .... 72 Hours of Continuous Monitoring

MAMu#1 at the Jellicoe Site; discrete 8-hour samples

MAMu#2 at Christ the King Catholic School site; discrete 1-hour samples

Sampling Date Sampling Times	Start End	MAY 12 12:00 20:00	MAY 12 12:00 20:00	MAY 13 11:00 19:00	MAY 13 11:00 19:00	MAY 13 19:00 03:00	MAY 13 03:00 11:00	MAY 14 03:00 11:00	MAY 14 11:00 19:00	MAY 14 19:00 03:00	MAY 14 03:00 11:00	MAY 14 11:00 19:00	MAY 14 19:00 03:00	MAY 15 03:00 11:00	MAY 15 11:00 19:00	Average for MAMu#1	Maximum for MAMu#1	Average for MAMu#2	Maximum for MAMu#2
MAMu Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2				
46 BENZENE		1.2	2.4	1.4	2.2	1.9	2.5	2.2	3.0	1.9	3.6	1.9	5.0	1.3	1.7	1.7	2.2	2.9	5.0
47 TETRACHLOROMETHANE																			
48 3,3-DIMETHYLPENTANE																			
49 CYCLOHEXANE				0.2		0.3	0.2		0.3	0.1	0.2	0.6		0.0		0.3	0.3	0.2	0.6
50 2,3-DIMETHYLPENTANE		0.7		1.3		1.4	0.2	1.2	0.3	0.3	1.0	0.7	0.5			1.0	1.4	0.4	0.7
51 2-METHYLHEXANE		0.7	0.5	1.4	0.6	1.5	0.8	1.2	0.8	1.0	0.9	1.0	1.6	0.5	0.1	1.0	1.5	0.8	1.6
52 CYCLOHEXENE																			
53 DIBROMOMETHANE																			
54 1,2-DICHLOROPROPANE																			
55 3-METHYLHEXANE		0.6	0.7	1.2	0.7	1.2	0.9	0.9	1.0	0.8	1.1	0.7	1.8	0.4	0.4	0.8	1.2	0.9	1.8
56 2,3-DICHLOROPROPENE																			
57 TRICHLOROETHENE		0.5								1.4			0.6			0.9	1.4	0.6	0.6
58 2,2,4-TRIMETHYLPENTANE		0.4	0.5	0.7	0.5	0.6	0.8	0.7	0.9	0.5	0.9	0.7	1.8	0.4	0.1	0.6	0.7	0.8	1.8
59 1-HEPTENE			0.1		0.2					0.2	0.1	0.1	0.4		0.1	0.2	0.2	0.2	0.4
60 HEPTANE		0.8	1.2	2.1	0.6	1.3	0.6	1.0	0.8	1.2	1.0	0.9	2.2	0.7	0.2	1.1	2.1	0.9	2.2
61 trans-2-HEPTENE																			
62 METHYLCYCLOHEXANE		0.5	1.1	1.2	0.1	0.7	0.4	0.5	0.1	0.7	0.4	0.7	2.0	0.3	0.2	0.7	1.2	0.6	2.0
63 2,7-DIMETHYLHEXANE																			
64 ETHYLCYCLOPENTANE			0.1	0.3		0.3		0.3		0.2		0.2	0.0	0.1		0.2	0.3	0.1	0.1
65 4-METHYLCYCLOHEXENE																			
66 2,5-DIMETHYLHEXANE		0.1		0.2		0.1		0.1		0.1		0.2		0.1		0.1	0.2		
67 1-CHLOROPENTANE																			
68 1,1,2-TRICHLOROETHANE																			
69 2,3,4-TRIMETHYLPENTANE		0.2	0.1	0.2		0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.6	0.2		0.2	0.3	0.3	0.6

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Table 8 cont.

Etobicoke '87 Air Quality Survey  
First Week ... 72 Hours of Continuous Monitoring

MAMu#1 at the Jellicoe Site; discrete 8-hour samples

MAMu#2 at Christ the King Catholic School site; discrete 1-hour samples

Sampling Date	MAY 12	MAY 12	MAY 13	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	Average	Maximum	Average	Maximum
Sampling Times	12:00	12:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	for	for	for	for
Start	20:00	20:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	MAMu#1	MAMu#1	MAMu#2	MAMu#2
End																		
MAMu Number	1	2	1	2	1	2	1	2	1	2	1	2	1	2				
70 TOLUENE	4.7	10.0	4.3	4.1	7.0	6.5	4.9	5.6	6.0	6.7	4.8	14.1	2.2	5.2	4.8	7.0	7.5	14.1
71 1,3-DICHLOROPROPANE																		
72 2-METHYLHEPTANE																		
73 4-METHYLHEPTANE	0.2	0.7	0.2	0.1	0.4	0.3	0.4	0.3	0.2	0.2	0.2	1.3	0.1	0.1	0.2	0.4	0.4	1.3
74 c-1,3-DIMETHYLCYCLOHEXANE		0.3							0.2	0.0	0.2	0.5		0.0	0.2	0.2	0.2	0.5
75 3-METHYLHEPTANE	0.3		0.4	0.1	0.6	0.1	0.6	0.3	0.4	0.1	0.4	0.5	0.2		0.4	0.6	0.2	0.5
76 1,2-DIBROMOETHANE																		
77 1,1-DIMETHYLCYCLOHEXANE																		
78 1-OCTENE					0.3		0.3		0.6		0.2		0.2		0.3	0.6		
79 trans-1,2-DIMETHYLCYCLOHEXANE		0.0	0.1		0.1		0.1		0.1		0.1	0.1			0.1	0.1	0.1	0.1
80 trans-4-OCTENE					0.1		0.2		0.2		0.1				0.2	0.2		
81 TETRACHLOROETHENE	1.2		0.5		0.5		1.5	1.0	1.0	5.7	1.0	0.7	1.4	0.2	1.0	1.5	1.9	5.7
82 c-1,4-DIMETHYLCYCLOHEXANE																		
83 OCTANE	0.3	0.9	0.4		0.6	0.2	0.5	0.2	0.4	0.2	0.4	1.3	0.2	0.1	0.4	0.6	0.5	1.3
84 trans-2-OCTENE																		
85 cis-1,2-DIMETHYLCYCLOHEXANE																		
86 CHLOROBENZENE										0.2	0.3	1.1		0.4	0.3	0.3	0.5	1.1
87 ETHYLCYCLOHEXANE		0.1	0.1		0.2				0.3		0.2	0.2			0.2	0.3	0.1	0.2
88 1-CHLOROCYCLOHEXANE																		
89 ETHYLBENZENE	0.8	2.6	1.7	0.7	2.4	2.0	1.7	1.1	1.5	1.2	1.1	7.5	0.5	0.7	1.4	2.4	2.3	7.5
90 m-XYLENE	2.1	8.0	5.4	2.4	7.8	6.7	5.4	3.2	4.7	3.4	3.0	23.7	1.3	3.6	4.2	7.8	7.3	23.7
91 p-XYLENE																		
92 4-METHYLOCTANE																		
93 2-METHYLOCTANE					0.3		0.2					0.2			0.3	0.3	0.2	0.2

**Etobicoke '87 Air Quality Survey**  
**First Week ... 72 Hours of Continuous Monitoring**

MAMu02 at Christ the King Catholic School site; discrete 1-hour samples

[illegible]

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Etobicoke '87 Air Quality Survey  
First Week ... 72 Hours of Continuous Monitoring

MAMu#1 at the Jellicoe Site; discrete 8-hour samples

MAMu#2 at Christ the King Catholic School site; discrete 1-hour samples

Sampling Date	MAY 12	MAY 12	MAY 13	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	Average	Maximum	Average	Maximum
Sampling Times	12:00	12:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	03:00	for	for	for	for
Start	20:00	20:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	11:00	MAMu#1	MAMu#1	MAMu#2	MAMu#2
End	1	2	1	2	1	2	1	2	1	2	1	2	1	2	2				
MAMu Number																			
118 1,5-DICHLOROPENTANE																			
119 isoBUTYLBENZENE	0.1										0.1	0.1				0.1	0.1	0.1	0.1
120 sec. BUTYLBENZENE																			
121 DECANE	0.3	0.7	0.5	0.7	1.0	0.6	0.4	0.2	0.4	0.2	0.9	1.5	0.2			0.5	1.0	0.7	1.5
122 3-(CHLOROMETHYL)HEPTANE																			
123 1,2,3-TRIMETHYLBENZENE	0.2	0.2	0.3	0.2	0.5	0.3	0.4	0.1	0.3	0.1	0.6	0.6	0.2			0.3	0.6	0.2	0.6
124 1-ISOPROPYLMETHYLBENZENE																			
125 1,2-DICHLOROBENZENE	0.1		0.1		0.2	0.2	0.2		0.2		0.3	0.2				0.2	0.3	0.2	0.2
126 INDAN																			
127 BUTYLCYCLOHEXANE			0.1				0.1				0.2	0.1				0.1	0.2	0.1	0.1
128 1,3-DIETHYLBENZENE			0.1		0.2		0.1		0.1		0.1					0.1	0.2		
129 1,4-DIETHYLBENZENE																			
130 BUTYLBENZENE																			
131 1,2-DIETHYLBENZENE																			
132 trans-DECAHYDRONAPHTHALENE																			
133 cis-DECAHYDRONAPHTHALENE																			
134 UNDECANE	0.2	0.3	0.3	1.0	0.6	0.8	0.2	0.4	0.4	0.2	0.9	0.8	0.1			0.4	0.9	0.6	1.0
135 1,2,3,4-TETRAMETHYLBENZENE	0.1		0.1		0.2		0.1		0.2		0.3		0.1			0.2	0.3		
136 1,2,3,4-TETRAMETHYLBENZENE			0.1		0.2		0.1		0.2		0.3		0.1			0.1	0.3		
137 1,3-DIISOPROPYLBENZENE																			
138 1,2,3,4-TETRAHYDRONAPHTHALENE					0.1		0.0		0.1		0.1					0.1	0.1		
139 1,4-DIISOPROPYLBENZENE																			
140 NAPHTHALENE																			
141 DODECANE				0.5		0.1			0.1	0.3		0.1				0.2	0.3	0.2	0.5

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Table 8 cont.

Etobicoke '87 Air Quality Survey  
First Week ... 72 Hours of Continuous Monitoring

MAMu#1 at the Jellicoe Site; discrete 8-hour samples

MAMu#2 at Christ the King Catholic School site; discrete 1-hour samples

Sampling Date	MAY 12	MAY 12	MAY 13	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	Average	Maximum	Average	Maximum
Sampling Times	12:00	12:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	for	for	for	for
Start	20:00	20:00	19:00	19:00	03:00	03:00	11:00	11:00	19:00	19:00	03:00	03:00	11:00	11:00	MAMu#1	MAMu#1	MAMu#2	MAMu#2
End																		
MAMu Number	1	2	1	2	1	2	1	2	1	2	1	2	1	2				
Total Compounds Identified	44	30	53	29	63	32	60	33	62	36	65	53	45	19	56	65	33	53
Total # of Peaks	127	40	131	39	167	39	144	38	144	44	152	70	94	26	137	167	42	70
Total Area of Peaks	9149	4312	12999	3688	17504	4160	13518	3916	15959	5473	14092	10922	6185	2890	12772	17504	5051	10922
Area of Identified Peaks	6308	3645	9957	3078	13046	3700	9675	3161	12669	4760	9998	9593	4251	2216	9415	13046	4350	9593
Area % Identified Peaks	69	84	77	83	75	89	72	89	79	87	71	88	69	74	73	79	85	89
Total Hydrocarbons ug/m3	42.1	63.1	65.4	52.7	81.6	61.1	66.9	58.7	87.1	85.1	57.9	162.0	25.5	35.4	60.9	87.1	74.0	162.0
Alkanes (ug/m3)	22.2	28.0	36.6	33.1	40.4	33.7	34.8	35.6	50.0	50.7	27.2	77.7	12.2	18.7	31.9	50.0	39.6	77.7
Cycloalkanes (ug/m3)	0.9	2.5	3.0	1.0	2.4	1.8	1.7	1.5	3.8	2.5	2.4	6.2	0.9	0.6	2.2	3.8	2.3	6.2
Alkenes (ug/m3)	0.4	1.0	0.4	1.5	1.6	1.3	1.4	1.7	1.5	3.1	0.6	4.2	0.5	0.7	0.9	1.6	1.9	4.2
Cycloalkenes (ug/m3)	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Alkynes (ug/m3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aromatics (ug/m3)	14.5	28.0	22.3	12.4	34.1	22.6	25.7	16.4	27.3	16.2	24.2	63.8	9.4	12.1	22.5	34.1	24.8	63.8
Chlorinated Alkanes (ug/m3)	0.0	3.6	0.0	4.7	0.4	1.5	0.5	2.5	0.2	4.8	0.0	8.3	0.7	2.7	0.3	0.7	4.0	8.3
Chlorinated Alkenes (ug/m3)	1.7	0.0	0.5	0.0	0.5	0.0	1.5	1.0	2.4	5.7	1.0	1.3	1.4	0.2	1.3	2.4	1.2	5.7
Chlorinated Aromatics (ug/m3)	0.3	0.0	0.6	0.0	0.6	0.2	0.4	0.0	0.4	0.2	1.0	1.3	0.1	0.4	0.5	1.0	0.3	1.3
Benzene:Ethylbenzene	1.6	1.3	0.8		0.8	2.2	1.3	2.9	1.2	3.4	1.8	1.3	2.8		1.5	2.8	2.2	3.4
Toulene:Ethylbenzene	6.3	4.3	2.6		3.0	4.2	2.9	5.4	3.9	6.1	4.5	3.1	4.9		4.0	6.3	4.6	6.1
Xylene:Ethylbenzene	5.9	4.0	6.9		7.0	4.3	6.9	4.2	6.5	4.0	6.2	4.6	3.9		6.2	7.0	4.2	4.6

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Table 9

Etobicoke '87 Air Quality Survey  
Single Source Monitoring

All Concentrations are in ug/m3

Sampling Time	Start End	MAY 20 11:30	MAY 20 11:34	MAY 20 12:31	MAY 20 12:34	MAY 20 13:31	MAY 20 13:34	MAY 20 14:48	MAY 20 14:34	MAY 27 13:55	MAY 27 13:46	MAY 28 14:12	MAY 28 14:15	MAY 29 08:51	MAY 29 08:41
		12:30	12:34	13:31	13:34	14:31	14:34	15:48	15:34	14:55	14:46	15:12	15:15	09:51	09:41
MAMu Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Wind Direction		East		East		East		East		Southeast		Southwest		West	
Wind Speed		14 km/hr		15 km/hr		11 km/hr		16 km/hr		12 km/hr		6 km/hr		15 km/hr	
1 PROPANE		10.9	21.0	9.8	14.5	4.6	13.6	8.1	9.7	5.7	4.8	14.5	14.0	9.2	5.6
2 PROPADIENE													0.3		
3 PROPYNE													0.5		
4 CHLOROMETHANE															
5 CYCLOPROPANE															
6 2-METHYLPROPANE		3.2	4.3	3.5	3.4		4.0	2.9	3.5	1.4	4.0	14.9	14.6	5.2	5.7
7 CHLOROETHENE															
8 2-CHLORO-2-METHYLPROPANE															
9 1-BUTENE		2.1		1.1		1.4		1.6				3.8	2.1	1.7	
10 1,3-BUTADIENE															
11 BUTANE		9.1	10.1	13.7	8.7	8.8	11.9	11.5	10.6	5.3	9.5	45.4	32.4	21.3	16.8
12 1-BUTYNE															
13 CHLOROETHANE															
14 3-METHYL-1-BUTENE													0.5		
15 2-METHYLBUTANE		7.1	8.8	5.3	7.7	5.9	8.5	9.6	8.5	3.9	5.9	20.3	27.6	18.7	11.8
16 2-METHYL-1-BUTENE		0.7	0.8	0.4	0.7		0.8	1.1	0.8			1.6	1.7	1.7	
17 PENTANE		4.7	9.6	3.6	6.0	4.0	5.4	7.3	5.4	3.9	3.6	15.5	19.1	14.9	7.6
18 2-METHYL-1,3-BUTADIENE													1.7		1.4
19 trans-2-PENTENE			0.8		0.7		0.8		0.8		0.5		2.6		0.9
20 cis-2-PENTENE			0.3						0.3				1.1		0.4
21 DICHLOROMETHANE			3.4				4.7		3.0		2.0		9.3		4.2
22 2-METHYL-2-BUTENE			0.9	0.2	0.8		0.7		0.7		0.5	2.0	3.6	2.5	1.1



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## Table 9 cont.

[illegible]

## Table 9 cont.

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[illegible]

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Etobicoke '87 Air Quality Survey  
Single Source Monitoring

All Concentrations are in ug/m3

Sampling Time	Start.	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 27	MAY 27	MAY 28	MAY 28	MAY 29	MAY 29
		11:30	11:34												
End		12:30	12:34	12:31	12:34	13:31	13:34	14:31	14:34	13:55	13:46	14:12	14:15	08:51	08:41
MAMu Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Wind Direction		East		East		East		East		Southeast		Southwest		West	
Wind Speed		14 km/hr		15 km/hr		11 km/hr		16 km/hr		12 km/hr		6 km/hr		15 km/hr	
71 1,3-DICHLOROPROPANE															
72 2-METHYLHEPTANE			0.7		0.6	0.7		0.8	0.7				1.9	1.0	2.0
73 4-METHYLHEPTANE		0.2			0.2				0.3			0.4	0.7	0.8	0.5
74 c-1,3-DIMETHYLCYCLOHEXANE		0.7			0.5			0.9		0.5		0.8	0.9	0.7	0.6
75 3-METHYLHEPTANE		1.6			1.3	0.8		1.1		1.5		1.7	2.2	2.2	1.7
76 1,2-DIBROMOETHANE															1.4
77 1,1-DIMETHYLCYCLOHEXANE															
78 1-OCTENE										0.7		0.8			
79 trans12DIMETHYLCYCLOHEXAN										0.4					0.3
80 trans-4-OCTENE															
81 TETRACHLOROETHENE		3.1	3.6		4.5	3.3		2.3	2.8	3.6	3.0		2.7	9.0	
82 c-1,4-DIMETHYLCYCLOHEXANE												0.5	0.2		
83 OCTANE		0.9	0.7		0.9	0.8		0.9	0.8	0.8	0.7	2.1	1.3	1.8	0.9
84 trans-2-OCTENE															2.4
85 cis12DIMETHYLCYCLOHEXANE										0.6					0.3
86 CHLOROBENZENE									0.9	0.5			0.8	0.5	0.5
87 ETHYLCYCLOHEXANE		0.3			0.2					0.6		0.4			
88 1-CHLOROHXANE															
89 ETHYLBENZENE		3.0	11.0		5.8	12.0		5.1	11.8	3.4	3.1	16.2	0.8	3.2	7.5
90 m,p - XYLENES		7.7	36.6		16.9	40.2		14.6	38.5	9.9	9.6	54.7	1.7	8.7	23.7
91															
92 4-METHYLOCTANE										0.8			0.9		
93 2-METHYLOCTANE										1.2			1.0		
94 3-METHYLOCTANE		0.8			0.6			0.6		0.4		0.5		0.4	1.7

Table 9 cont.

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Etobicoke '87 Air Quality Survey  
Single Source Monitoring

All Concentrations are in ug/m3

Sampling Time	Start	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 27	MAY 27	MAY 28	MAY 28	MAY 29	MAY 29
End		11:30	11:34	12:31	12:34	13:31	13:34	14:31	14:34	15:48	15:34	13:55	13:46	08:51	08:41
MAMU Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Wind Direction		East		East		East		East		East		Southwest		West	
Wind Speed		14 km/hr		15 km/hr		11 km/hr		16 km/hr		12 km/hr		6 km/hr		15 km/hr	
95 STYRENE															
96 1,4-DICHLOROBUTANE			1.3				1.5								
97 o-XYLENE		2.5	9.6	4.6	10.4	4.1	9.8	3.2	3.0						8.3
98 1,1,2,2-TETRACHLOROETHANE										13.3	0.7				
99 1,2,3-TRICHLOROPROPANE		1.5		1.3		1.2						3.0	7.8	2.3	20.3
100 1-NONENE		0.2		0.4											
101 trans-1,4-DICL-2-BUTENE										1.7					
102 NONANE		2.7	1.2	2.4	1.9	2.0	1.7	0.7	0.9						2.3
103 ISOPROPYLBENZENE			0.6	0.3	0.7		0.9			5.8		1.2	1.4	0.6	3.3
104 2-CHLOROTOLUENE		1.2		1.1		0.8				0.3		0.1	0.7		5.4
105 3-CHLOROTOLUENE										3.2					
106 4-CHLOROTOLUENE															
107 PROPYLBENZENE															
108 3-ETHYLTOLUENE		2.2	1.9	2.3	1.8	1.8	2.6	1.9	2.1			0.9	1.5	0.5	
109 4-ETHYLTOLUENE										2.8		2.4	3.5	1.6	3.8
110 1,3,5-TRIMETHYLBENZENE		2.9	1.1	2.5	1.2	2.3	1.7	1.8	1.1	2.4				1.0	
111 2-ETHYLTOLUENE		0.6	0.7	0.7	1.0	0.8	1.3	0.8	0.8			1.7	2.0	1.4	1.8
112 1,2,4-TRIMETHYLBENZENE															

Table 9 cont.

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Etobicoke '87 Air Quality Survey  
Single Source Monitoring

All Concentrations are in ug/m3

Sampling Time	Start End	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 27	MAY 27	MAY 28	MAY 28	MAY 29	MAY 29
		11:30	11:34	12:31	12:34	13:31	13:34	14:48	14:34	13:55	13:46	14:12	14:15	08:51	08:41
MAMu Number		12:30	12:34	13:31	13:34	14:31	14:34	15:48	15:34	14:55	14:46	15:12	15:15	09:51	09:41
Wind Direction		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Wind Speed		East		East		East		East		Southeast		Southwest		West	
		14 km/hr		15 km/hr		11 km/hr		16 km/hr		12 km/hr		6 km/hr		15 km/hr	
119 isoBUTYLBENZENE															
120 DECANE		4.5	2.3	3.8	2.8	3.5	3.0	1.0	1.6	6.1		1.8	1.4		6.2
121 sec.BUTYLBENZENE										0.4					
122 3-(CHLOROMETHYL)HEPTANE										3.4					
123 1,2,3-TRIMETHYLBENZENE			0.9		1.0		1.5		0.9	3.7		2.1	1.5	1.3	2.7
124 ISOPROPYLMETHYLBENZENE					0.9					2.7		1.1			
125 1,2-DICHLOROBENZENE			1.1	2.1	2.2		2.2		1.2	1.1					
126 INDAN										1.3					
127 BUTYLCYCLOHEXANE		0.8		0.4		0.4				1.5					1.4
128 1,3-DIETHYLBENZENE		0.4		0.4											
129 1,4-DIETHYLBENZENE										1.7					
130 BUTYLBENZENE			1.0		1.0		1.3		0.8			0.5	1.2		2.1
131 1,2-DIETHYLBENZENE															
132 transDECAHYDRONAPHTHALENE						0.5				1.6					0.9
133 cis-DECAHYDRONAPHTHALENE															
134 UNDECANE		2.9	2.4	1.9	2.2	1.9	2.8	0.8	1.8	6.9		1.8	1.0	0.7	3.5
135 1,2,3,4-TETRAMETHYLBENZENE			0.9				0.9			1.6					1.0
136 1,2,3,4-TETRAMETHYLBENZENE															
137 1,3-DIISOPROPYLBENZENE												0.5			
138 1,2,3,4-TETRAHYDRONAPHTHALENE															
139 1,4-DIISOPROPYLBENZENE															
140 NAPHTHALENE															
141 DODECANE			1.0	0.8	0.9		0.8		0.7	13.7		9.2			0.6

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Table 9 cont.

Etobicoke '87 Air Quality Survey  
Single Source Monitoring

All Concentrations are in ug/m3

Sampling Time	Start	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 20	MAY 27	MAY 27	MAY 28	MAY 28	MAY 29	MAY 29
	End	11:30	11:34	12:31	12:34	13:31	13:34	14:48	14:34	13:55	13:46	14:12	14:15	08:51	08:41
MAMu Number		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Wind Direction		East		East		East		East		Southeast		Southwest		West	
Wind Speed		14 km/hr		15 km/hr		11 km/hr		16 km/hr		12 km/hr		6 km/hr		15 km/hr	
Total Compounds Identified		51	53	56	53	40	53	42	49	58	26	53	66	46	63
Total # of Peaks		112	75	116	76	101	79	88	65	133	32	116	86	96	105
Total Area of Peaks		9214	13565	16308	13822	8493	15764	10759	8544	15251	3554	13418	20631	8150	22030
Area of Identified Peaks		6128	11669	13062	12164	6064	13794	7472	7544	9304	3196	8165	18499	5843	18398
Area % Identified Peaks		67	86	80	88	71	88	69	88	61	90	61	90	72	84
Total Hydrocarbons (ug/m3)		161.6	211.5	198.8	219.3	162.4	248.8	141.2	135.1	226.1	53.3	237.3	337.0	174.3	323.8
Alkanes (ug/m3)		93.0	88.5	95.9	90.2	94.0	112.8	81.4	75.2	73.9	36.6	164.6	173.4	112.8	94.6
Cycloalkanes (ug/m3)		5.9	3.3	7.5	4.5	4.0	7.2	6.0	4.0	6.4	1.2	5.7	10.1	5.0	7.7
Alkenes (ug/m3)		3.3	2.8	2.1	2.3	1.4	2.2	2.7	2.6	2.4	0.9	8.8	14.5	6.3	6.2
Cycloalkenes (ug/m3)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alkynes (ug/m3)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Aromatics (ug/m3)		45.1	90.1	68.5	98.7	54.0	99.8	41.8	40.6	135.7	10.3	55.0	103.1	45.4	178.1
Chlorinated Alkanes (ug/m3)		9.9	22.2	17.1	18.2	6.0	21.9	4.8	8.0	3.4	4.3	0.5	25.8	2.0	33.3
Chlorinated Alkenes (ug/m3)		3.1	3.6	4.5	3.3	2.3	2.8	3.6	3.0	0.0	0.0	2.7	9.0	2.4	3.3
Chlorinated Aromatics (ug/m3)		1.2	1.1	3.2	2.2	0.8	2.2	0.9	1.7	4.3	0.0	0.0	0.8	0.5	0.5
Benzene:Ethylbenzene		1.7	0.4	0.8	0.4	0.8	0.3	1.4	1.3	0.3	3.3	3.0	1.5	3.8	0.2
Toulene:Ethylbenzene		5.7	1.7	3.8	1.7	4.1	1.8	4.0	3.8	0.9	5.6	5.1	4.6	6.0	1.6
Xyylene:Ethylbenzene		3.4	4.2	3.7	4.2	3.7	4.1	3.9	4.0	4.2	3.2	3.6	4.2	3.9	4.0

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Table 10

## Etobicoke '87 Air Quality Survey

Weekend Sampling : 8-hour GC Samples : May 22 to May 25  
 MAMU#1 at the Jellicoe Site MAMU#2 at Christ the King Catholic School

All Concentrations in ug/m3

Sampling Date Sampling Times	Start End	MAY 22 14:00 22:00	MAY 22 14:00 22:00	MAY 22 22:00 06:00	MAY 22 22:00 06:00	MAY 23 06:00 14:00	MAY 23 06:00 14:00	MAY 23 14:00 22:00	MAY 23 14:00 22:00	MAY 23 22:00 06:00	MAY 23 22:00 06:00	MAY 24 06:00 14:00	MAY 24 06:00 14:00	MAY 24 14:00 22:00	MAY 24 22:00 06:00	MAY 24 22:00 06:00	MAY 25 06:00 14:00	Average for MAMU#1	Maximum for MAMU#1	Average for MAMU#2	Maximum for MAMU#2
MAMu Number		1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	1				
1 PROPANE		1.1	0.9	3.6	2.2	1.2	2.0	1.6	1.5	1.5	3.2	0.8	1.8	1.8	5.2	6.6	1.1	2.0	5.2	2.6	6.6
2 PROPADIENE																					
3 PROPYNE																					
4 CYCLOPROPANE																					
5 CHLOROMETHANE																					
6 2-METHYLPROPANE		1.9	1.0	1.2	2.6	1.8	1.7	1.0	0.6		0.7	0.5	0.8	2.6	4.0	3.5	1.1	1.8	4.0	1.6	3.5
7 CHLOROETHENE																					
8 1-BUTENE																					
9 1,3-BUTADIENE																					
10 BUTANE		6.9	3.1	3.8	9.0	5.0	5.6	2.8	1.6	3.0	2.2	1.6	2.5	5.5	10.1	10.7	3.0	4.6	10.1	5.0	10.7
11 1-BUTYNE																					
12 CHLOROETHANE																					
13 3-METHYL-1-BUTENE																					
14 2-METHYLBUTANE		4.6	2.6	2.4	7.1	3.4	3.5	2.1	1.0	1.9	1.9	1.4	2.4	3.6	8.2	9.4	2.1	3.3	8.2	4.0	9.4
15 2-METHYL-1-BUTENE																					
16 PENTANE		2.5	1.3	0.8	4.9	2.1	2.0	1.5	0.7	1.3	1.5	1.0	1.7	2.4	6.0	7.0	1.2	2.1	6.0	2.7	7.0
17 2-METHYL-1,3-BUTADIENE																					
18 trans-2-PENTENE																					
19 cis-2-PENTENE																					
20 DICHLOROMETHANE																					
21 2-METHYL-2-BUTENE																					

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Table 10 cont.

## Etobicoke '87 Air Quality Survey

Weekend Sampling : 8-hour GC Samples : May 22 to May 25  
 MAMU#1 at the Jellicoe Site MAMU#2 at Christ the King Catholic School

All Concentrations in ug/m3

Sampling Date	MAY 22	MAY 22	MAY 22	MAY 22	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 24	MAY 24	MAY 24	MAY 24	MAY 24	MAY 25	Average for MAMU#1	Maximum for MAMU#1	Average for MAMU#2	Maximum for MAMU#2
Sampling Times	14:00	14:00	22:00	22:00	06:00	06:00	14:00	14:00	22:00	22:00	06:00	06:00	14:00	22:00	22:00	06:00				
Start	22:00	22:00	06:00	06:00	14:00	14:00	22:00	22:00	06:00	06:00	14:00	14:00	22:00	22:00	06:00	14:00				
End																				
MAMU Number	1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	1				
22 2,2-DIMETHYLBUTANE																				
23 2-CHLORO-2-METHYLPROPANE																				
24 trans-1,2-DICHLOROETHENE																				
25 3-METHYL-1-PENTENE																				
26 4-METHYL-1-PENTENE																				
27 CYCLOPENTANE	0.4	0.2	0.2	0.6	0.3		0.2						0.3	0.5		0.2	0.3	0.5	0.4	0.6
28 2,3-DIMETHYLBUTANE	0.3			0.9	0.3		0.2		0.2			0.3	0.3	0.7		0.2	0.3	0.7	0.5	0.9
29 2-METHYLPENTANE	1.4	0.3	0.3	4.7	1.7	1.4	0.8	0.4	0.4	0.8	0.6	1.1	1.6	3.6	4.1	1.1	1.3	3.6	1.8	4.7
30 3-METHYLPENTANE	0.8	0.2	0.2	4.1	1.7	1.4	0.5	0.2		0.5	0.4	0.7	1.0	2.2	2.5		1.0	2.2	1.4	4.1
31 1-HEXENE																				
32 cis-1,2-DICHLOROETHENE																				
33 2-CHLOROBUTANE																				
34 HEXANE	1.5	0.3	0.5	8.0	2.7	3.0	0.9	0.4	0.3	0.9	0.9	1.3	1.8	3.7	3.9	1.6	1.5	3.7	2.5	8.0
35 1-CHLORO-2-METHYLPROPANE																				
36 TRICHLOROMETHANE																				
37 trans-3-HEXENE																				
38 3-CHLORO-2-METHYLPROPANE				0.3										0.2	0.2		0.2	0.2	0.2	0.3
39 METHYLCYCLOPENTANE	0.6	0.1		1.6	0.7	0.5	0.3	0.1	0.1	0.3	0.3	0.4	0.6	1.3	1.3	0.5	0.5	1.3	0.6	1.6
40 2,2-DIMETHYLPENTANE				0.4	0.1	0.1								0.2	0.2		0.1	0.2	0.2	0.4
41 1,2-DICHLOROETHANE																				
42 2,4-DIMETHYLPENTANE	0.1			0.4									0.2	0.3	0.3	0.1	0.2	0.3	0.4	0.4
43 1,1,1-TRICHLOROETHANE	0.9		3.9	1.1	2.2	0.6	1.3	0.4		1.5	0.3	0.5	0.6	1.3	1.7	0.6	1.4	3.9	1.0	1.7
44 2,2,3-TRIMETHYLBUTANE																				
45 1-CHLOROBUTANE																				





Table 10 cont.

## Etobicoke '87 Air Quality Survey

Weekend Sampling : 8-hour GC Samples : May 22 to May 25  
 MAMU#1 at the Jellicoe Site MAMU#2 at Christ the King Catholic School

All Concentrations in ug/m3

Sampling Date Sampling Times	Start End	MAY 22 14:00	MAY 22 14:00	MAY 22 22:00	MAY 22 22:00	MAY 23 06:00	MAY 23 06:00	MAY 23 14:00	MAY 23 14:00	MAY 23 22:00	MAY 23 22:00	MAY 24 06:00	MAY 24 06:00	MAY 24 14:00	MAY 24 22:00	MAY 24 22:00	MAY 25 06:00	Average for MAMU#1	Maximum for MAMU#1	Average for MAMU#2	Maximum for MAMU#2
MAMU Number		1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	1				
70 TOLUENE		5.2	1.5	1.2	14.1	5.0	7.1	2.4	2.1	1.8	6.7	2.2	3.4	3.6	11.1	15.7	5.2	4.2	11.1	7.2	15.7
71 1,3-DICHLOROPROPANE																					
72 2-METHYLHEPTANE					1.1			0.1		0.1		0.1		0.2			0.3	0.2	0.3	1.1	1.1
73 4-METHYLHEPTANE		0.3		0.1	0.4	0.2	0.2				0.6		0.2	0.1	0.4	0.4		0.2	0.4	0.4	0.6
74 c-1,3-DIMETHYLCYCLOHEXANE					1.0		0.2		0.1		0.3			0.1	0.3	0.4	0.3	0.2	0.3	0.4	1.0
75 3-METHYLHEPTANE		0.4	0.1		1.2	0.4	0.3	0.2	0.1	0.1	0.5	0.2	0.3	0.4	0.8	0.9	0.4	0.4	0.8	0.5	1.2
76 1,2-DIBROMOETHANE																					
77 1,1-DIMETHYLCYCLOHEXANE																					
78 1-OCTENE		0.2			0.2	0.1	0.1	0.3	0.1		0.2	0.1			0.1	0.2	0.3	0.2	0.3	0.2	0.2
79 trans-12-DIMETHYLCYCLOHEXANE					0.3						0.2				0.1	0.1	0.1	0.1	0.1	0.2	0.3
80 trans-4-OCTENE																					
81 TETRACHLOROETHENE		0.6			1.6	0.5	0.7	0.3			0.3		0.3		1.2	1.2	0.8	0.7	1.2	0.8	1.6
82 c-1,4-DIMETHYLCYCLOHEXANE					0.4										0.1	0.2	0.1	0.1	0.1	0.3	0.4
83 OCTANE		0.4	0.1	0.1	1.4	0.4	0.4	0.1	0.3	0.1	0.8	0.2	0.2	0.3	0.7	0.9	0.6	0.3	0.7	0.6	1.4
84 trans-2-OCTENE																					
85 cis-12-DIMETHYLCYCLOHEXANE																					
86 CHLOROBENZENE																					
87 ETHYLCYCLOHEXANE		0.1			0.7		0.2		0.2		0.3				0.2	0.3	0.2	0.2	0.2	0.3	0.7
88 1-CHLOROHXANE																					
89 ETHYLBENZENE		1.4	0.4	0.3	3.3	1.0	3.7	0.5	2.6	0.4	7.2	0.4	1.3	0.7	2.0	4.7	1.8	0.9	2.0	3.3	7.2
90 m&p -XYLENES		4.4	1.4	0.9	10.5	2.9	13.0	1.4	8.6	1.2	24.9	1.2	3.9	2.1	6.8	15.9	5.3	2.9	6.8	11.2	24.9
91																					
92 4-METHYLOCTANE																					
93 2-METHYLOCTANE					0.7		0.3								0.5	0.6		0.5	0.5	0.6	0.7

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## Etobicoke '87 Air Quality Survey

Weekend Sampling : 8-hour GC Samples : May 22 to May 25

MAMU#1 at the Jellicoe Site

MAMU#2 at Christ the King Catholic School

All Concentrations in ug/m3

Sampling Date	Start	MAY 22	MAY 22	MAY 22	MAY 22	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 24	MAY 24	MAY 24	MAY 24	MAY 24	MAY 25	Average	Maximum	Average	Maximum
Sampling Times	End	14:00	14:00	22:00	22:00	06:00	06:00	14:00	14:00	22:00	22:00	06:00	06:00	14:00	22:00	22:00	06:00	for	for	for	for
MAMU Number		1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	1	MAMU#1	MAMU#1	MAMU#2	MAMU#2
94 3-METHYLOCTANE		3.2			1.2	3.2	1.0		0.6		0.2			1.7	1.2	1.7		2.4	3.2	0.8	1.2
95 STYRENE		2.6	0.1	0.2	0.4	2.2	0.5	0.2	0.4	0.1	0.8	0.6	0.3	1.1	1.0	0.5	1.2	1.0	2.6	0.4	0.8
96 1,4-DICHLOROBUTANE																					
97 o-XYLENE		1.4	0.4	0.3	3.5	1.1	3.8	0.5	2.5	0.4	7.0	0.5	1.2	0.8	2.3	4.6	1.7	1.0	2.3	3.3	7.0
98 1,1,2,2-TETRACHLOROETHANE																					
99 1,2,3-TRICHLOROPROPANE					0.6	0.2			0.3		1.3						0.2	0.2	0.2	0.7	1.3
100 1-NONENE					0.4		0.3	0.2	0.2		0.3					0.1	0.4	0.3	0.4	0.3	0.4
101 trans-1,4-DICL-2-BUTENE																					
102 NONANE		0.3	0.1	0.1	1.5	0.5	0.8	0.2	0.7	0.2	1.7	0.2	0.3	0.2	0.8	1.0	0.7	0.4	0.8	0.9	1.7
103 ISOPROPYLBENZENE		0.1			0.2	0.1										0.1	0.1	0.1	0.1	0.2	0.2
104 2-CHLOROTOLUENE																					
105 3-CHLOROTOLUENE		0.2			0.8	0.3	0.3	0.1	0.4	0.1	0.7	0.1	0.2	0.1	0.5	0.6	0.3	0.2	0.5	0.5	0.8
106 4-CHLOROTOLUENE						0.2	0.3		0.1		0.4				0.2	0.2	0.1	0.1	0.2	0.3	0.4
107 PROPYLBENZENE		0.2			0.7	0.2	0.3	0.1	0.2	0.1	0.4	0.1	0.1	0.2	0.4	0.5	0.3	0.2	0.4	0.3	0.7
108 3-ETHYLTOLUENE		0.6		0.2	2.0	0.6		0.3	0.6	0.3	1.2	0.2	0.4	0.5	1.3	1.5	0.7	0.5	1.3	1.1	2.0
109 4-ETHYLTOLUENE		0.3		0.1	0.9	0.3	0.6	0.2	0.3	0.1	0.5	0.1	0.2	0.3	0.6	0.7	0.3	0.3	0.6	0.5	0.9
110 1,3,5-TRIMETHYLBENZENE		0.4		0.2	1.4	0.4		0.2	0.6	0.2	1.0	0.1	0.3	0.3	0.9	1.0	0.5	0.3	0.9	0.9	1.4
111 2-ETHYLTOLUENE																					
112 tert.BUTYLBENZENE		1.0		0.4	2.7	0.9		0.5	1.0	0.4		0.4	0.6	0.9	2.1		1.2	0.9	2.1	1.4	2.7
113 1,2,4-TRIMETHYLBENZENE		1.3		0.5	4.1	1.2		0.7	1.2	0.5	2.0	0.5	0.8	1.1	2.6	2.8	1.5	1.1	2.6	2.2	4.1
114 tert.BUTYLCYCLOHEXANE																					
115 1,3-DICHLOROBENZENE							0.2		0.3		0.7				0.5					0.4	0.7
116 (CHLOROMETHYL)BENZENE							0.7		0.6		0.8									0.7	0.8
117 1-DECENE					0.2		0.2										0.2	0.2	0.2	0.2	0.2

Table 10 cont.

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## Etobicoke '87 Air Quality Survey

Weekend Sampling : 8-hour GC Samples : May 22 to May 25  
 MAMU#1 at the Jellicoe Site MAMU#2 at Christ the King Catholic School

All Concentrations in ug/m3

Sampling Date	Start	MAY 22	MAY 22	MAY 22	MAY 22	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 24	MAY 24	MAY 24	MAY 24	MAY 24	MAY 25	Average	Maximum	Average	Maximum
Sampling Times	End	14:00	14:00	22:00	22:00	06:00	06:00	14:00	14:00	22:00	22:00	06:00	06:00	14:00	22:00	22:00	06:00	for	for	for	for
MAMU Number		1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	1	MAMU#1	MAMU#1	MAMU#2	MAMU#2
118 1,5-DICHLOROPENTANE			0.5				2.0										0.3	0.3	0.3	1.2	2.0
119 isoBUTYLBENZENE																					
120 sec. BUTYLBENZENE					0.1		0.3		0.5					0.5				0.5	0.5	0.3	0.5
121 DECANE	0.3	0.3	0.2	1.5	0.5	1.0	0.3	1.1	0.3	1.6	0.2	0.3	0.2	0.9	1.2	0.7		0.4	0.9	1.0	1.6
122 3-(CHLOROMETHYL)HEPTANE				0.3				0.2						0.1				0.1	0.1	0.3	0.3
123 1,2,3-TRIMETHYLBENZENE	0.3		0.1	1.2	0.4		0.2	0.5	0.1	0.7	0.1	0.2	0.3	0.7	0.9	0.5		0.3	0.7	0.7	1.2
124 ISOPROPYLMETHYLBENZENE																					
125 1,2-DICHLOROBENZENE	0.2				0.8	0.2			0.3		0.4		0.1	0.1	0.5	0.5	0.3	0.2	0.5	0.4	0.8
126 INDAN																					
127 BUTYLCYCLOHEXANE							0.3		0.3		0.5		0.1		0.2	0.3	0.2	0.2	0.2	0.3	0.5
128 1,3-DIETHYLBENZENE	0.1				0.4	0.1			0.2		0.3		0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.4
129 1,4-DIETHYLBENZENE		0.1	0.1	0.6		0.3	0.1	0.2						0.1		0.3		0.1	0.3	0.3	0.6
130 BUTYLBENZENE																					
131 1,2-DIETHYLBENZENE																					
132 transDECAHYDRONAPHTHALENE							0.4			0.4				0.5	0.5			0.5	0.5	0.5	0.5
133 cis-DECAHYDRONAPHTHALENE																					
134 UNDECANE	0.3	0.1	0.3	1.5	0.4	0.7		0.7	0.2	0.9	0.2	0.2		0.7	0.9	0.5		0.4	0.7	0.7	1.5
135 1,2,3,4-TETRAMETHYLBENZENE		0.1	0.1			0.3		0.2		0.3	0.1	0.1		0.3	0.4	0.3		0.2	0.3	0.2	0.4
136 1,2,3,4-TETRAMETHYLBENZENE						0.2		0.1		0.1				0.2	0.3	0.2		0.2	0.2	0.2	0.3
137 1,3-DIISOPROPYLBENZENE																					
138 1,2,3,4-TETRAHYDRONAPHTHALENE																					
139 1,4-DIISOPROPYLBENZENE																					
140 NAPHTHALENE																					
141 DODECANE																					

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Table 10 cont.

## Etobicoke '87 Air Quality Survey

Weekend Sampling : 8-hour GC Samples : May 22 to May 25

MAMU#1 at the Jellicoe Site

MAMU#2 at Christ the King Catholic School

All Concentrations in ug/m3

Sampling Date	MAY 22	MAY 22	MAY 22	MAY 22	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 23	MAY 24	MAY 24	MAY 24	MAY 24	MAY 24	MAY 25	Average	Maximum	Average	Maximum
Sampling Times	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	for	for	for	for
MAMU Number	1	2	1	2	1	2	1	2	1	2	1	2	1	1	2	1	MAMU#1	MAMU#1	MAMU#2	MAMU#2
Total Compounds Identified	49	29	33	61	49	55	41	51	34	54	39	43	46	62	58	50	44.8	62.0	50.1	61.0
Total # of Peaks	115	60	74	183	121	134	70	120	60	145	63	97	96	155	173	135	98.8	155.0	130.3	183.0
Total Area of Peaks	10120	3006	3857	27878	9820	14480	4019	10025	3173	21020	3051	6375	6993	18678	26553	10030	7749.0	18678.3	15619.7	27878.0
Area of Identified Peaks	7917	2256	2530	17798	7278	10070	3336	6567	2432	13835	2540	4986	5697	14917	20377	5698	5816.1	14917.1	10841.2	20377.2
Area % Identified Peaks	78	75	66	64	74	70	83	66	77	66	83	78	81	80	77	57	75.4	83.2	70.7	78.2
Total Hydrocarbons ug/m3	55.0	16.5	23.0	127.7	51.8	67.3	25.1	36.4	16.9	84.3	18.0	32.8	42.6	107.1	130.6	49.7	43.2	107.1	70.8	130.6
Alkanes (ug/m3)	30.4	11.3	14.2	65.2	29.2	28.5	14.1	10.7	10.6	21.0	9.8	16.8	26.8	61.8	66.4	19.8	24.1	61.8	31.4	66.4
Cycloalkanes (ug/m3)	1.8	0.3	0.2	6.6	1.6	1.9	0.6	0.9	0.2	2.3	0.4	0.9	1.5	4.4	4.9	2.3	1.4	4.4	2.5	6.6
Alkenes (ug/m3)	0.2	0.0	0.0	0.8	0.1	0.6	0.5	0.2	0.0	0.5	0.1	0.0	0.0	0.1	0.3	1.0	0.2	1.0	0.3	0.8
Cycloalkenes (ug/m3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alkynes (ug/m3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aromatics (ug/m3)	20.8	4.5	4.7	49.7	17.5	31.6	8.2	22.0	6.0	54.3	7.3	14.0	13.4	36.9	54.1	24.2	15.4	36.9	32.9	54.3
Chlorinated Alkanes (ug/m3)	0.0	0.5	0.0	3.5	0.2	2.0	1.3	1.5	0.0	3.0	0.3	0.5	0.6	3.4	3.1	2.6	0.9	3.4	2.0	3.5
Chlorinated Alkenes (ug/m3)	0.6	0.0	0.0	1.6	0.5	0.7	0.3	0.0	0.0	0.3	0.0	0.3	0.0	1.2	1.2	0.8	0.4	1.2	0.6	1.6
Chlorinated Aromatics (ug/m3)	0.3	0.0	0.0	1.6	0.6	1.5	0.1	1.6	0.1	3.1	0.1	0.3	0.3	1.1	1.8	0.7	0.4	1.1	1.4	3.1
Benzene:Ethylbenzene	1.1	1.2	0.9	0.0	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.4	0.2	1.2
Toluene:Ethylbenzene	3.6	3.6	4.4	4.3	5.0	1.9	4.9	0.8	4.6	0.9	5.2	2.6	5.1	5.5	3.4	2.9	4.6	5.5	2.5	4.3
Xylene:Ethylbenzene	4.1	4.4	4.3	4.3	3.9	4.5	3.8	4.3	4.1	4.4	4.0	3.9	4.2	4.5	4.4	3.9	4.1	4.5	4.3	4.5

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## Etobicoke '87 Air Quality Survey

Morning Samples - one-hour Cartridge Samples as collected at Christ the King Catholic School

Concentrations in ug/m3

Sampling Date Sampling Times	Start End	MAY 13 04:30 05:30	MAY 13 05:30 06:30	MAY 13 06:30 07:30	MAY 14 03:49 04:59	MAY 14 05:00 06:00	MAY 14 06:00 07:00	MAY 15 04:06 05:06	MAY 15 05:07 06:07	MAY 15 06:07 07:07	MAY 22 04:00 05:00	MAY 22 06:00 07:00	MAY 27 04:00 05:00	MAY 27 05:00 06:00	MAY 27 06:00 07:00	MAY 28 04:00 05:00	MAY 28 05:00 06:00	MAY 28 06:00 07:00	MAY 29 04:00 05:00	MAY 29 06:00 07:00	Average	Maximum
1 PROPANE		18.9	25.5	31.2	3.2	2.5	3.7	3.2	2.8	3.6	22.2	16.8	16.6	15.3	4.4	23.7	8.1	17.2	12.3	9.7	12.7	31.2
2 PROPADIENE																						
3 PROPYNE																						
4 CHLOROMETHANE																						
5 CYCLOPROPANE																						
6 2-METHYLPROPANE		3.2	4.2	8.3	2.5	1.6	2.2	1.2	0.8	1.2	5.4	4.8	3.6	5.0	2.2	17.8	4.8	12.7	7.3	6.0	5.0	17.8
7 CHLOROETHENE																						
8 1-BUTENE		0.8		2.6						0.5											1.3	2.6
9 1,3-BUTADIENE																						
10 BUTANE		9.6	12.0	24.4	7.5	4.4	6.1	3.4	2.3	3.5	15.7	8.7	10.3	15.2	6.3	47.2	11.8	37.9	23.8	19.4	14.2	47.2
11 1-BUTYNE																						
12 CHLOROETHANE		0.7	0.9	0.9																	0.8	0.9
13 3-METHYL-1-BUTENE																						
14 2-METHYLBUTANE		6.5	9.1	20.2	6.5	3.9	5.7	1.9	1.6	2.6	11.5	8.6	8.3	14.0	7.0	25.1	4.5	30.3	11.0	16.0	10.2	30.3
15 2-METHYL-1-BUTENE			1.0	1.7	0.8											1.6					1.3	1.7
16 PENTANE		4.4	6.0	13.5	4.5	2.6	3.8	1.2	1.1	1.7	7.4	5.6	5.6	7.8	3.6	14.7	2.7	18.9	6.3	11.2	6.5	18.9
17 2-METHYL-1,3-BUTADIENE																						
18 trans-2-PENTENE		0.7	1.7	2.4	0.9	0.4	0.6												0.9		1.0	2.4
19 cis-2-PENTENE			0.4	1.1	0.4																0.6	1.1
20 DICHLOROMETHANE		8.6	7.3	9.7	2.5		3.6											5.5			6.2	9.7
21 2-METHYL-2-BUTENE		0.5	0.8	1.3	0.8		0.6														0.8	1.3

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## Etobicoke '87 Air Quality Survey

Morning Samples - one-hour Cartridge Samples as collected at Christ the King Catholic School

Concentrations in ug/m3

Sampling Date	Start	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	MAY 15	MAY 22	MAY 22	MAY 27	MAY 27	MAY 27	MAY 28	MAY 28	MAY 28	MAY 29	MAY 29		
Sampling Times	End	04:30	05:30	06:30	03:49	05:00	06:00	04:06	05:07	06:07	04:00	06:00	04:00	05:00	06:00	04:00	05:00	06:00	04:00	06:00	Average	Maximum
22 2,2-DIMETHYLBUTANE		0.3	0.9	1.5																	0.9	1.5
23 2-CHLORO-2-METHYLPROPANE																						
24 trans-1,2-DICHLOROETHENE																						
25 4-METHYL-1-PENTENE																						
26 3-METHYL-1-PENTENE																						
27 CYCLOPENTANE		0.6	0.9	1.6	0.6		0.5									1.6	0.8	2.1	1.2		1.1	2.1
28 2,3-DIMETHYLBUTANE		0.7	1.0	2.4	0.7	0.4	0.6									2.1		2.7	0.8	1.8	1.3	2.7
29 2-METHYLPENTANE		3.2	4.4	11.0	3.1	1.8	2.9	0.7	0.7	1.2	5.0	3.4	2.2	6.3	4.8	10.4	2.3	12.8	3.8	6.0	4.5	12.8
30 3-METHYLPENTANE		2.3	2.9	7.5	1.9	1.1	1.7	0.5	0.4	0.7	3.7	2.6	2.9	5.6	4.9	9.0	2.0	9.6	2.2	3.6	3.4	9.6
31 1-HEXENE																						
32 cis-1,2-DICHLOROETHENE																						
33 2-CHLOROBUTANE																						
34 HEXANE		3.8	4.5	11.5	2.7	1.5	2.4	0.8	0.7	0.9	9.2	20.4	9.2	11.5	10.7	17.9	3.6	16.8	4.0	6.7	7.3	20.4
35 TRICHLOROMETHANE																						
36 trans-3-HEXENE																						
37 1-CHLORO-2-METHYLPENTANE																						
38 3-CHLORO-2-METHYLPROPENE																						
39 1-CHLORO-2-METHYLPROPANE																						
40 2,2-DIMETHYLPENTANE				0.7												0.9		0.8			0.8	0.9
41 METHYLCYCLOPENTANE		1.2	1.5	3.8	1.0	0.6	1.0			0.4											1.3	3.8
42 1,2-DICHLOROETHANE											2.2	2.5	2.1	2.8	1.8	5.3	0.7	5.1	1.3	2.0	2.6	5.3
43 2,4-DIMETHYLPENTANE		0.4	0.5	1.3	0.3		0.4									1.3		1.4			0.8	1.4
44 1,1,1-TRICHLOROETHANE		5.2	4.4	8.2	1.8		1.6	1.8	1.5	1.7			9.9	19.7		3.3		4.7		1.5	5.0	19.7
45 1-CHLOROBUTANE																						

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## Etobicoke '87 Air Quality Survey

Morning Samples - one-hour Cartridge Samples as collected at Christ the King Catholic School

Concentrations in ug/m3

Sampling Date Sampling Times	Start End	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	MAY 15	MAY 22	MAY 22	MAY 27	MAY 27	MAY 27	MAY 28	MAY 28	MAY 28	MAY 29	MAY 29	Average	Maximum
		04:30 05:30	05:30 06:30	06:30 07:30	03:49 04:59	05:00 06:00	06:00 07:00	04:06 05:06	05:07 06:07	06:07 07:07	04:00 05:00	06:00 07:00	04:00 05:00	05:00 06:00	06:00 07:00	04:00 05:00	05:00 06:00	06:00 07:00	04:00 05:00	06:00 07:00		
46 BENZENE		2.6	3.9	11.2	3.0	2.0	3.6	1.3	1.2	2.0	4.6	3.8	3.8	5.3	5.7	9.1	3.6	15.6	7.1	6.8	5.1	15.6
47 TETRACHLOROMETHANE																						
48 3,3-DIMETHYLPENTANE																						
49 CYCLOHEXANE		0.5	0.5	1.0									0.5			2.0		2.0			1.1	2.0
50 2-METHYLHEXANE		1.3	1.7	4.2	1.0	0.6	1.1				3.3	2.3	1.7	3.5	2.5	6.3	1.1	7.3	2.0	2.7	2.7	7.3
51 2,3-DIMETHYLPENTANE		0.5	0.8	1.9			0.6				3.2	2.3		3.4				7.1	1.9	2.7	2.4	7.1
52 CYCLOHEXENE																						
53 3-METHYLHEXANE		1.4	2.0	4.7	1.0	0.6	1.1			0.4	2.6	1.9	1.5	2.7	1.9	4.9	0.9	5.1	1.4		2.1	5.1
54 DIBROMOMETHANE																						
55 1,2-DICHLOROPROPANE																						
56 2,3-DICHLOROPROPENE																						
57 TRICHLOROETHENE																						
58 1-HEPTENE																						
59 2,2,4-TRIMETHYLPENTANE		1.3	1.8	4.3	1.0	0.6	1.2				2.3	2.4	1.2	2.3	2.0	3.9	0.7	5.4	1.4		2.1	5.4
60 HEPTANE		1.6	2.1	4.5	0.8	0.5	0.9				3.0	2.2	2.2	2.3	1.6	4.1	0.6	3.5	1.9		2.1	4.5
61 trans-2-HEPTENE																						
62 METHYLCYCLOHEXANE		1.4	1.8	3.3							3.1	1.5	0.8	1.1		2.6		2.4		1.6	1.9	3.3
63 2,2-DIMETHYLHEXANE																						
64 2,5-DIMETHYLHEXANE																						
65 ETHYLCYCLOPENTANE				0.2												1.4		0.4		1.1	0.8	1.4
66 4-METHYLCYCLOHEXENE																						
67 1-CHLOROPENTANE																						
68 1,1,2-TRICHLOROETHANE																						
69 2,3,4-TRIMETHYLPENTANE		0.5	0.7	1.9			0.5				1.1		0.8	0.7	1.4		1.9		0.8	1.0	1.9	





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## Etobicoke '87 Air Quality Survey

Morning Samples - one-hour Cartridge Samples as collected at Christ the King Catholic School

Concentrations in ug/m3

Sampling Date	Start	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	MAY 15	MAY 22	MAY 22	MAY 27	MAY 27	MAY 27	MAY 28	MAY 28	MAY 28	MAY 29	MAY 29		
Sampling Times	End	04:30	05:30	06:30	03:49	05:00	06:00	04:06	05:07	06:07	04:00	06:00	04:00	05:00	06:00	04:00	05:00	06:00	04:00	06:00	Average	Maximum
		05:30	06:30	07:30	04:59	06:00	07:00	05:06	06:07	07:07	05:00	07:00	05:00	06:00	07:00	05:00	06:00	07:00	05:00	07:00		
94 2-METHYLOCTANE																						
95 3-METHYLOCTANE																						
96 STYRENE											1.8	0.4	1.8	5.6	1.0	1.9	0.7	1.2	6.1	5.5	2.6	6.1
97 1,4-DICHLOROBUTANE																						
98 1,1,2,2-TETRACHLOROETHANE																						
99 o-XYLENE		1.9	3.1	10.1	1.1	0.7	1.7				3.3	3.3	3.5	5.1	3.4	13.4	2.3	4.8	4.8	5.1	4.2	13.4
100 1-NONENE																						
101 1,2,3-TRICHLOROPROPANE																						
102 trans-1,4-DICL-2-BUTENE																						
103 NONANE		1.4	1.7	2.7							1.9	0.8	1.9	2.5	0.6	4.8	1.0	1.4	2.5	1.6	1.9	4.8
104 ISOPROPYLBENZENE																						
105 2-CHLOROTOLUENE																						
106 3-CHLOROTOLUENE											1.1	0.5	1.1	1.5	0.3	2.9	0.7	0.9	0.6	0.9	1.0	2.9
107 PROPYLBENZENE		0.7	0.9	2.0									0.5	0.9	0.7	1.9					1.1	2.0
108 4-CHLOROTOLUENE																0.5					0.5	0.5
109 3-ETHYLTOLUENE		1.6	2.1	5.0	0.8	0.5	1.0					1.5	1.8	2.9	2.1	6.0	1.8	2.7	1.5	2.0	2.2	6.0
110 4-ETHYLTOLUENE				2.3							1.3	0.9	0.8	1.4		3.2		1.4	0.8	0.8	1.4	3.2
111 1,3,5-TRIMETHYLBENZENE		0.9	1.0	2.2			0.5				1.9	1.0	1.5	2.2	0.9	4.9	1.7	1.7	1.3	1.4	1.6	4.9
112 2-ETHYLTOLUENE			0.9	2.1																	1.5	2.1
113 1-DICENE																						
114 tert.BUTYLBENZENE		0.7	0.9	2.5	0.7					0.3		2.7	3.0	4.6	3.5	11.1	3.9	4.3			3.2	11.1
115 1,2,4-TRIMETHYLBENZENE		2.6	3.0	8.3	1.0	0.5	1.5				4.6	3.5	3.0	5.9	4.4	14.1	4.6	4.7	3.8	3.4	4.3	14.1
116 1,3-DICHLOROBENZENE																						
117 tertBUTYLCYCLOHEXANE																						

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## Etobicoke '87 Air Quality Survey

Morning Samples - one-hour Cartridge Samples as collected at Christ the King Catholic School

Concentrations in ug/m3

Sampling Date Sampling Times	Start End	MAY 13 04:30 05:30	MAY 13 05:30 06:30	MAY 13 06:30 07:30	MAY 14 03:49 04:59	MAY 14 05:00 06:00	MAY 14 06:00 07:00	MAY 15 04:06 05:06	MAY 15 05:07 06:07	MAY 15 06:07 07:07	MAY 22 04:00 05:00	MAY 22 06:00 07:00	MAY 27 04:00 05:00	MAY 27 05:00 06:00	MAY 27 06:00 07:00	MAY 28 04:00 05:00	MAY 28 05:00 06:00	MAY 28 06:00 07:00	MAY 29 04:00 05:00	MAY 29 06:00 07:00	Average	Maximum
118 (CHLOROMETHYL)BENZENE																						
119 DECANE		2.3	2.5	4.3	0.5		0.5				3.5	0.9	3.3	3.9	0.5	6.2	2.6	1.6	2.3	2.0	2.4	6.2
120 1,5-DICHLOROPENTANE																						
121 isoBUTYLBENZENE																						
122 3-(CHLOROMETHYL)HEPTANE																						
123 sec-BUTYLBENZENE																						
124 1,2,3-TRIMETHYLBENZENE		1.1	1.4	3.0			0.5				0.7	1.5	1.8	0.1	1.0	0.3	0.8				1.1	3.0
125 ISOPROPYL(METHYLBENZENE																						
126 1,2-DICHLOROBENZENE											1.0		0.8	0.9							0.9	1.0
127 INDAN																						
128 BUTYLCYCLOHEXANE											0.9		0.9	1.1			0.7			0.3	0.8	1.1
129 1,3-DIETHYLBENZENE											0.4								0.3		0.3	0.4
130 1,4-DIETHYLBENZENE																						
131 BUTYLBENZENE		1.0	1.0	2.8																	1.6	2.8
132 1,2-DIETHYLBENZENE																						
133 transDECAHYDRONAPHTHALENE											1.0		1.0	0.7							0.9	1.0
134 UNDECANE		1.7	1.9	2.8	0.6		0.8				2.0		2.4	2.5	0.0				1.4	1.6	1.6	2.8
135 cis-DECAHYDRONAPHTHALENE																						
136 1235-TETRAMETHYLBENZENE				1.6									0.6	0.8						0.5	0.9	1.6
137 1234-TETRAMETHYLBENZENE																						
138 1234TETRAHYDRONAPHTHALENE																						
139 1,4-DIISOPROPYLBENZENE																						
140 NAPHTHALENE																						
141 DODECANE			0.4	1.1							0.6								1.0	0.8	0.8	1.1

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Table 11 cont.

## Etobicoke '87 Air Quality Survey

Morning Samples - one-hour Cartridge Samples as collected at Christ the King Catholic School

Concentrations in ug/m3

Sampling Date	MAY 13	MAY 13	MAY 13	MAY 14	MAY 14	MAY 14	MAY 15	MAY 15	MAY 15	MAY 22	MAY 22	MAY 27	MAY 27	MAY 27	MAY 28	MAY 28	MAY 28	MAY 29	MAY 29		
Sampling Times - Start	04:30	05:30	06:30	03:49	05:00	06:00	04:06	05:07	06:07	04:00	06:00	04:00	05:00	06:00	04:00	05:00	06:00	04:00	06:00		
End	05:30	06:30	07:30	04:59	06:00	07:00	05:06	06:07	07:07	05:00	07:00	05:00	06:00	07:00	05:00	06:00	07:00	05:00	07:00	Average	Maximum
Total Compounds Identified	46	49	56	33	22	36	12	12	16	34	34	40	41	33	44	32	42	36	36	34	56
Total # of Peaks	65	73	114	42	28	44	17	18	28	119	51	76	86	46	125	63	90	74	86	66	125
Total Area of Peaks	7939	10784	24829	3964	2406	4452	1636	1814	2276	5868	3177	3981	5486	2371	12216	2940	6810	4064	4436	5866	24829
Area of Identified Peaks	6976	9255	21410	3553	2122	3862	1308	879	1673	3631	2161	3121	3989	1480	9080	1968	5632	2610	3266	4630	21410
Area % Identified Peaks	88	86	86	90	88	87	80	48	74	62	68	78	73	62	74	67	83	64	74	75	90
Total Hydrocarbons (ug/m3)	128.9	165.1	363.1	62.6	32.6	67.0	18.7	15.7	25.2	179.0	136.2	153.9	225.5	106.3	440.3	96.4	321.5	151.3	167.0	150.3	440.3
Alkanes (ug/m3)	66.5	86.7	166.0	37.0	20.8	34.9	14.7	11.9	17.0	95.7	82.0	77.6	116.5	50.8	191.3	42.6	191.8	81.4	93.1	77.8	191.8
Cycloalkanes (ug/m3)	3.2	4.0	10.7	1.3	0.0	1.1	0.0	0.0	0.3	3.1	5.2	5.2	7.3	4.6	19.8	5.4	13.1	2.3	3.0	4.7	19.8
Alkenes (ug/m3)	3.9	6.3	15.8	3.8	1.0	2.7	0.0	0.0	0.5	2.3	3.1	2.2	3.4	2.6	7.6	1.2	7.0	4.0	1.6	3.6	15.8
Cycloalkenes (ug/m3)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.4	0.0	1.1	0.2	1.4
Alkynes (ug/m3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aromatics (ug/m3)	38.5	49.8	131.0	13.6	8.4	19.0	4.0	3.7	6.6	64.5	36.6	58.0	77.4	37.4	181.0	38.0	84.8	46.9	53.3	50.1	181.0
Chlorinated Alkanes (ug/m3)	13.9	14.8	29.1	5.6	1.9	7.4	0.0	0.0	0.8	7.7	5.5	6.8	13.4	6.2	20.1	3.8	16.6	12.3	10.6	9.3	29.1
Chlorinated Alkenes (ug/m3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chlorinated Aromatics (ug/m3)	2.6	3.0	8.3	1.0	0.5	1.5	0.0	0.0	0.0	5.7	3.9	4.1	7.5	4.7	16.9	5.3	5.6	4.4	4.3	4.2	16.9
Benzene:Ethylbenzene	1.2	1.2	1.0	3.1	3.2	2.6				1.3	1.2	1.0	1.2	2.0	0.7	1.8	2.9	1.6	1.2		
Toulene:Ethylbenzene	8.6	6.3	4.2	5.8	5.5	5.1				9.5	4.4	6.2	7.6	5.4	6.9	8.7	7.1	3.2	3.0		
Xylene:Ethylbenzene	4.0	4.1	4.1	4.2	4.3	4.3				3.9	4.3	3.8	4.1	4.3	4.4	4.8	3.8	3.7	3.9		

# ETOBICOKE\_87: A113

Start: 87/05/11 14:33 Scan: 300 sec. Ave: 60.0 min. Duration: 93.5 hrs.

Loc: JELlicOE ON SHORELINE

## WINDS Blowing From

1 Division = 10% of Time

Calm ( < 3 km/hr) = 39.8%

Low ( < 3 km/hr) = .0%

High ( >100 km/hr) = .0%

## NO2 Blowing From

1 Division = .01 ppm -- A. MEAN

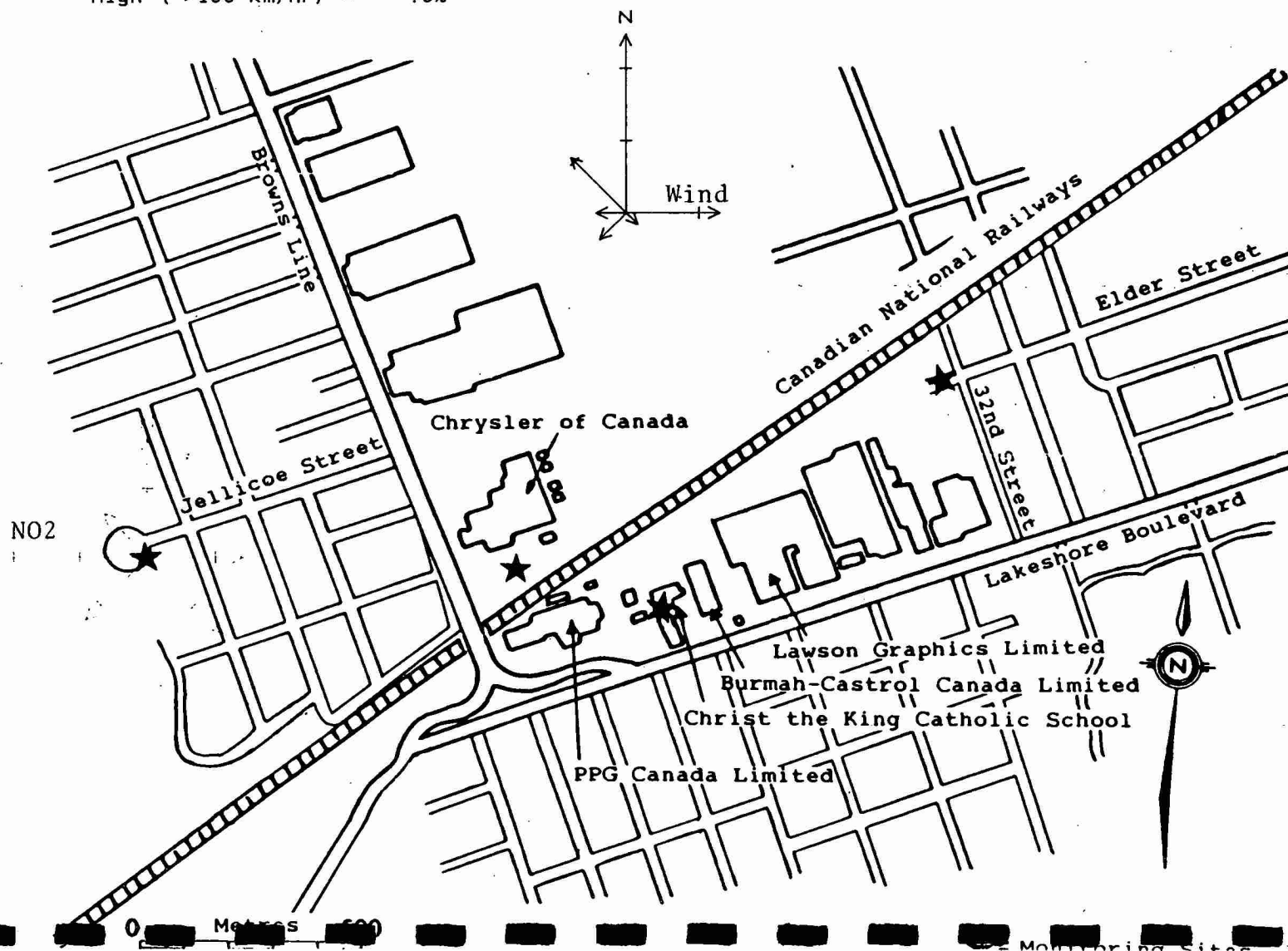


Figure 2

# ETOBICOKE 87: A113

Start: 87/05/11 14:33 Scan: 300 sec. Ave: 60.0 min. Duration: 93.5 hrs.  
Loc: JELlicOE ON SHORELINE

## WINDS Blowing From

1 Division = 10% of Time

Calm ( < 3 km/hr) = 39.8%

Low ( < 3 km/hr) = .0%

High ( >100 km/hr) = .0%

NO2 blowing From

1 Division = 10% of Time

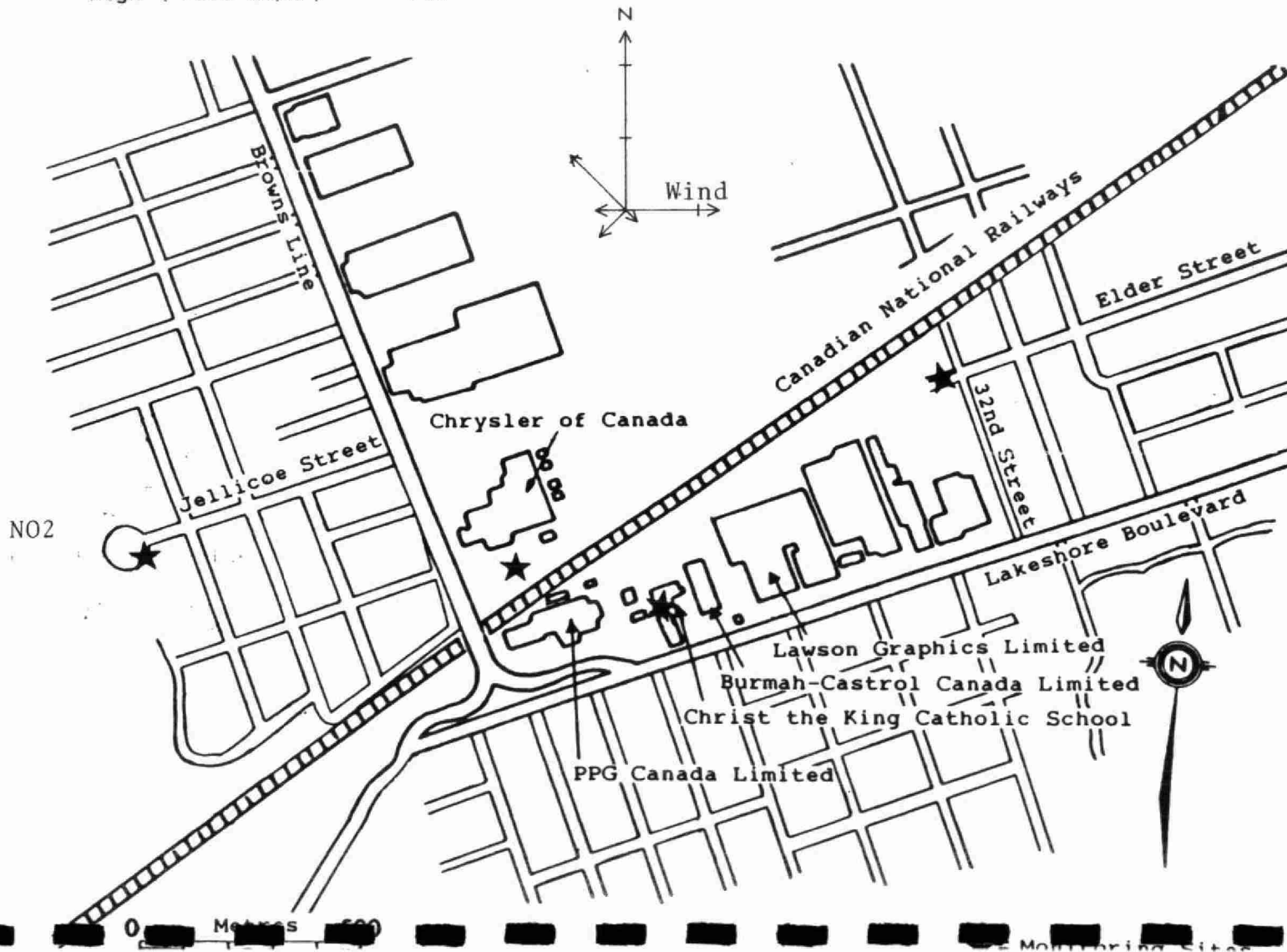


Figure 2

# ETOBICOKE\_87: B124

Start: 87/05/12 13:59 Scan: 300 sec. Ave: 60.0 min. Duration: 69.1 hrs.

Loc: CHRIST THE KING SCHOOL

WINDS Blowing From

1 Division = 10% of Time

Calm ( < 3 km/hr) = 37.7%

Low ( < 3 km/hr) = .0%

High ( >100 km/hr) = .0%

Flow: blowing from

1 Division = 10% of Time

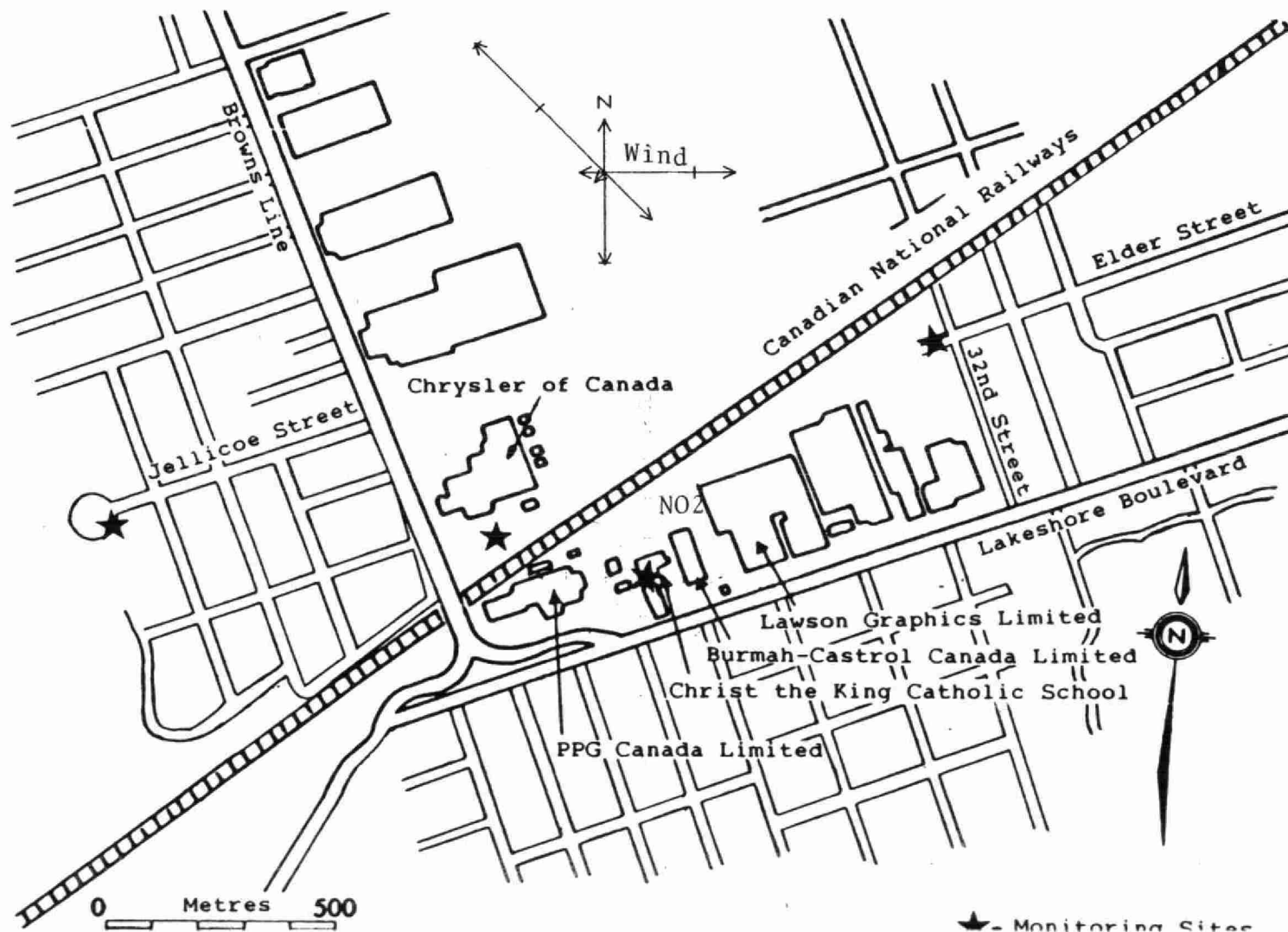


Figure 3

# ETOBICOKE\_87: A152

Start: 87/05/15 12:33 Scan: 300 sec. Ave: 60.0 min. Duration: 93.8 hrs.

Loc: JELlicOE ON SHORELINE

WINDS Blowing From

1 Division = 10% of Time

Calm (< 3 km/hr) = 49.5%

Low (< 3 km/hr) = .0%

High (>100 km/hr) = .0%

Wind Blowing From

1 Division = 10% of Time

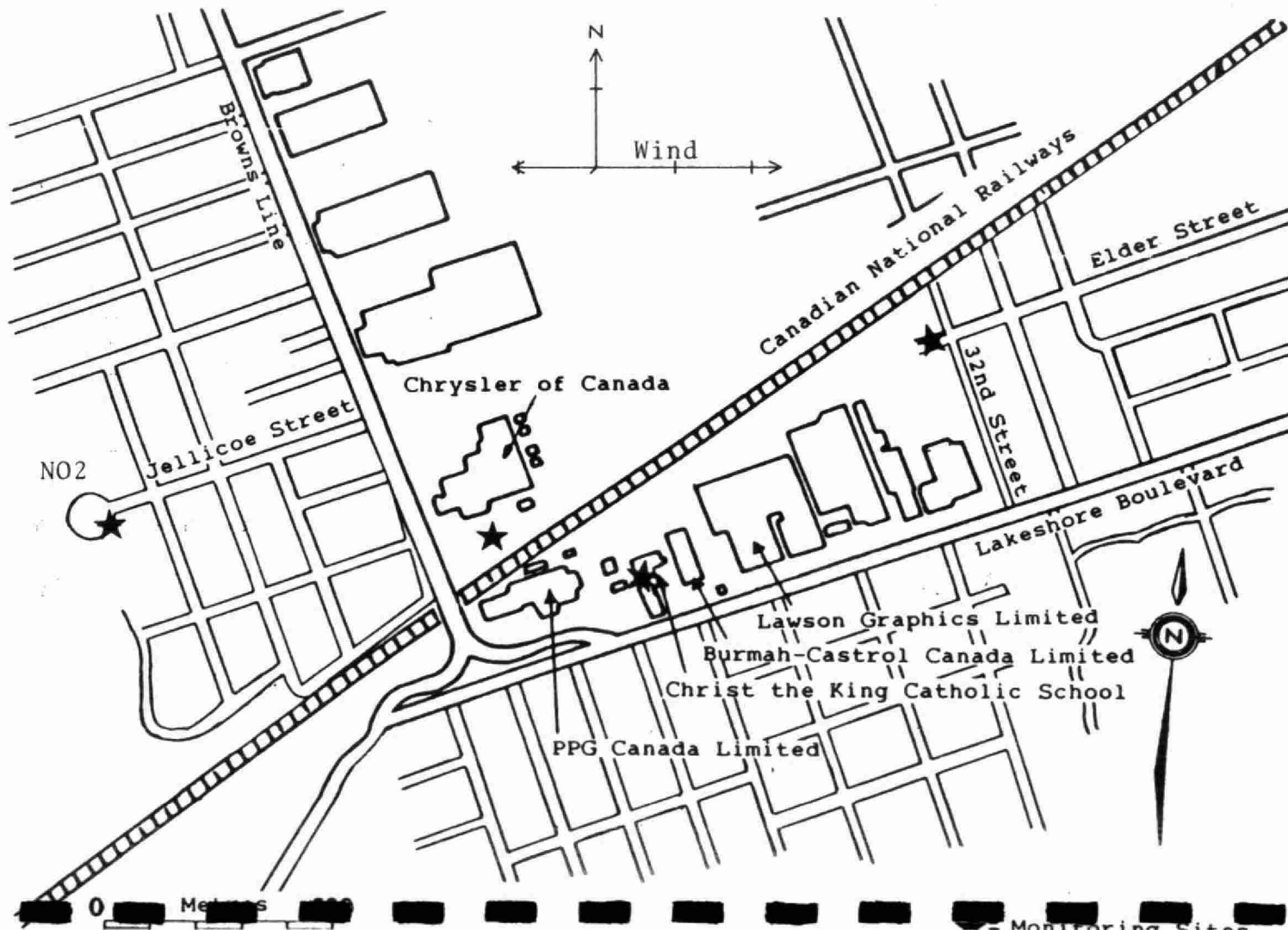


Figure 4



# ETOBICOKE\_87: B153

Start: 87/05/15 11:42 Scan: 300 sec. Ave: 60.0 min. Duration: 94.0 hrs.

Loc: CHRIST THE KING SCHOOL

WINDS Blowing From

1 Division = 10% of Time

Calm ( < 3 km/hr) = 51.1%

Low ( < 3 km/hr) = .0%

High ( >100 km/hr) = .0%

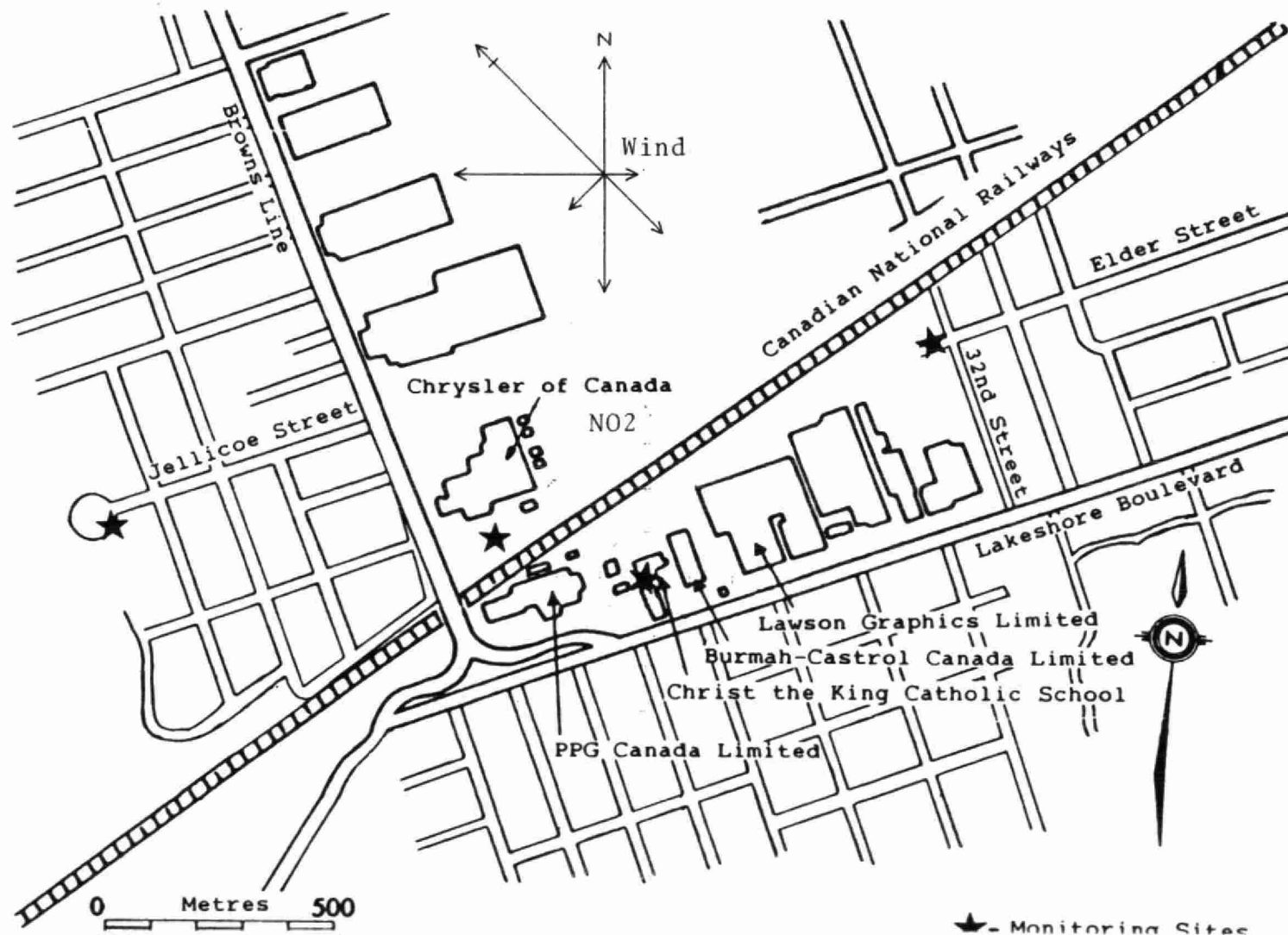


Figure 5

# ETOBICOKE\_87: A222

Start: 87/05/22 09:53 Scan: 300 sec. Ave: 60.0 min. Duration: 72.2 hrs.

Loc: JELlicOE ON SHORELINE

## WINDS Blowing From

1 Division = 10% of Time

Calm ( < 3 km/hr) = 84.7%

Low ( < 3 km/hr) = .0%

High ( >100 km/hr) = .0%

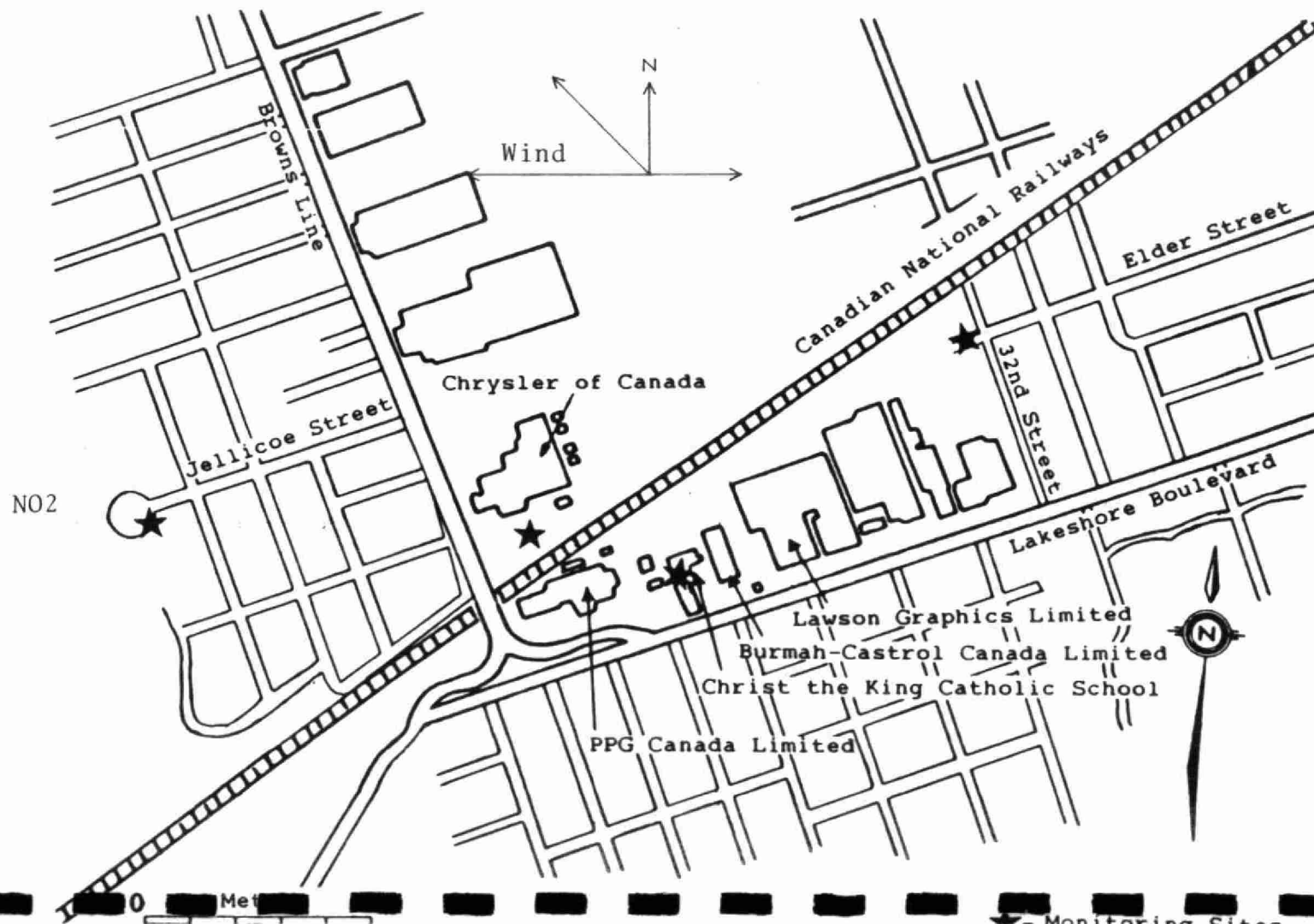


Figure 6

# ETOBICOKE\_87: B223

Start: 87/05/22 14:36 Scan: 300 sec. Ave: 60.0 min. Duration: 67.0 hrs.  
Loc: SCHOOLYARD

## WINDS Blowing From

1 Division = 10% of Time  
Calm ( < 3 km/hr) = 55.2%  
Low ( < 3 km/hr) = .0%  
High ( >100 km/hr) = .0%

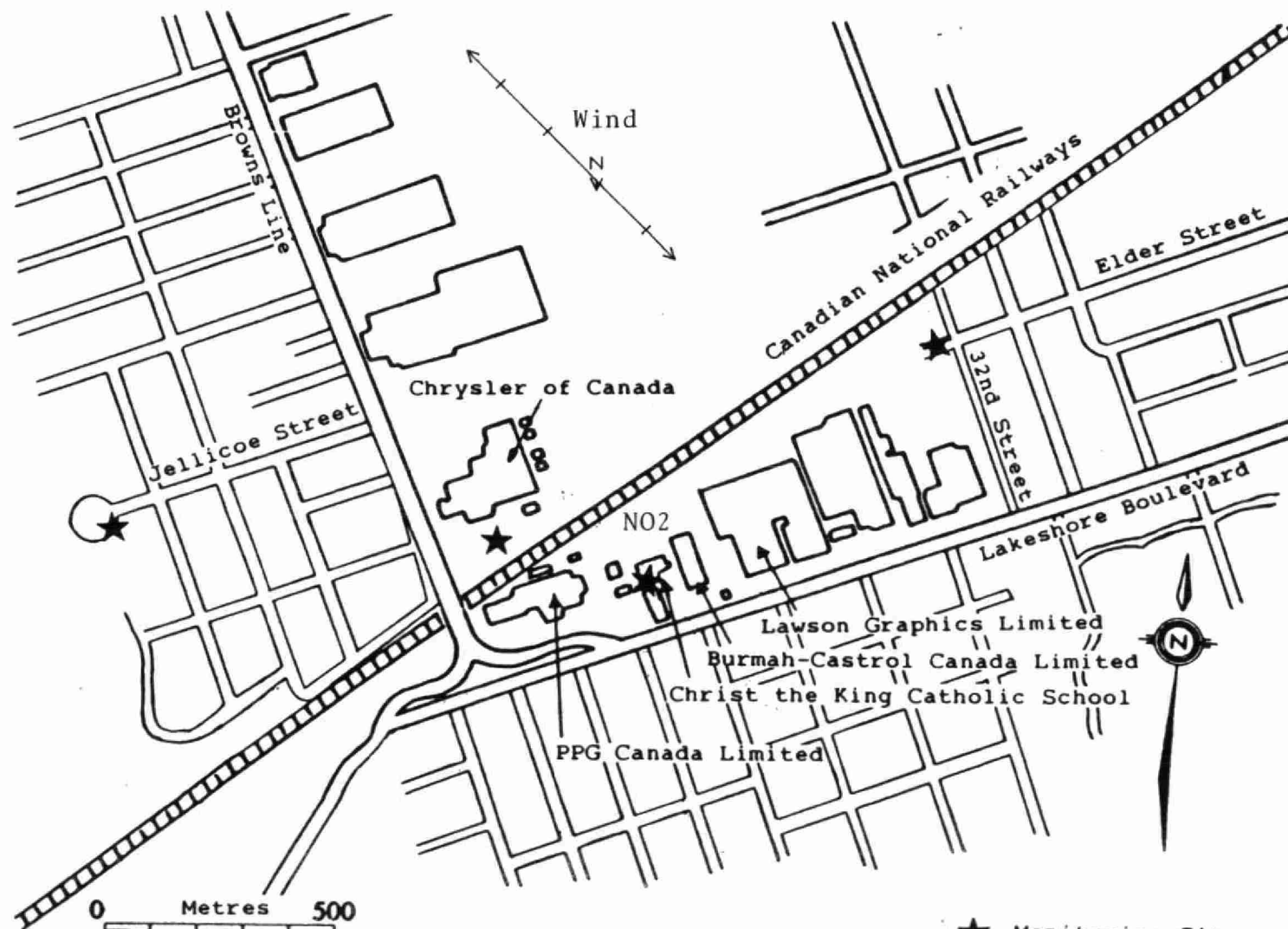


Figure 7

APPENDIX C

## Abbreviations

#	Number	n.a.	Not available
°C	Degrees Celsius	n.d.	Not detected
@	At	NO	Nitric Oxide Nitrogen
BTX	Benzene, toluene, and xylenes	NO <sub>x</sub>	Oxides of Nitrogen
CH <sub>4</sub>	Methane	NO <sub>2</sub>	Nitrogen Dioxide
CO	Carbon Monoxide	O <sub>3</sub>	Ozone
dd	Day	ppm	Parts per million
GC	Gas Chromatograph	SO <sub>2</sub>	Sulphur Dioxide
hr(s)	Hour(s)	STEL	Short Term Exposure Limit
H <sub>2</sub> S	Hydrogen Sulphide	THC	Total Hydrocarbons
i.e.	For example	TH-M	Non-methane Hydrocarbons
km/hr	Kilometres per hour	TLV	Threshold Limit Value
Loc.	Location	TOP	Trace Organic Preconcentrator
MAMu	Mobile Air Monitoring Unit	TRS	Total Reduced Sulphur compounds
ml/min	Millilitres per minute	TWA	Time Weighted Average
mm	Month	ug/m <sup>3</sup>	Micrograms per cubic metre
MP	Monitoring Period	UV	Ultra Violet
MSD	Mass Selective Detector		
N/A	Not Applicable		



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Bell, R.W.

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